

GenCore version 5.1.6
Copyright (c) 1993 - 2004 CompuGen Ltd.

OM protein - protein search, using sw model

Run on: March 29, 2004, 14:32:19 ; Search time 55 Seconds
(without alignments)
164.391 Million cell updates/sec

Title: US-09-902-517-49

Perfect score: 169
Sequence: 1 SPKMVGSGCFGRKMDRISSSGLGCKVLRH 32

Scoring table: BLOSUM62
Gapop 10.0, Gapext 0.5

Searched: 1586107 seqs, 282547505 residues

Total number of hits satisfying chosen parameters: 1586107

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database: A_Geneseq_29Jan04:*

1: Geneseq1980s:*\n2: Geneseq1990s:*\n3: Geneseq2000s:*\n4: Geneseq2001s:*\n5: Geneseq2002s:*\n6: Geneseq2003as:*\n7: Geneseq2003bs:*\n8: Geneseq2004s:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	ID	Description
1	169	100.0	32	2	AAR40861
2	169	100.0	32	2	AAR34301
3	169	100.0	32	2	AAR36381
4	169	100.0	32	2	AAW70090
5	169	100.0	32	2	AAW67040
6	169	100.0	32	2	AAW82550
7	169	100.0	32	4	AAW91333
8	169	100.0	32	4	AAW91340
9	169	100.0	32	4	AAW45739
10	169	100.0	32	4	AAW12434
11	169	100.0	32	5	ABG98205
12	169	100.0	32	6	ADA00765
13	169	100.0	32	6	ADA00784
14	169	100.0	32	6	ABU63315
15	169	100.0	32	7	ADDS5931
16	169	100.0	32	7	ADD93296
17	169	100.0	32	2	AAW45762
18	169	100.0	32	2	AAW35490
19	169	100.0	32	2	AAW45761
20	169	100.0	108	7	ADD93297
21	169	100.0	109	4	AAW45738
22	169	100.0	118	6	ABR96183
23	169	100.0	134	2	AAW06603
24	169	100.0	134	2	AAW04987
25	169	100.0	134	2	AAW05325

26	169	100.0	134	4	AAW45735	AAW45735 Human BNP
27	169	100.0	134	7	ADD93293	ADD93293 Human pre
28	169	100.0	175	2	AAW72812	AAW72812 Gamma-IFN
29	167	98.8	33	4	AAW91339	AAW91339 Brain nat
30	165	97.6	31	2	AAW34302	AAW34302 Mutated B
31	165	97.6	32	2	AAW51258	AAW51258 Human B-t
32	165	97.6	32	2	AAW80212	AAW80212 Human B-t
33	160	94.7	32	2	AAW51261	AAW51261 Type-B br
34	160	94.7	32	2	AAW80208	AAW80208 Human B-t
35	159	94.1	32	2	AAW51305	AAW51305 Human B-t
36	159	94.1	32	2	AAW80213	AAW80213 Human B-t
37	158	93.5	32	4	AAW70810	AAW70810 Human nat
38	155	91.7	32	2	AAW51262	AAW51262 Human B-t
39	155	91.7	32	2	AAW51281	AAW51281 Human B-t
40	155	91.7	32	2	AAW80251	AAW80251 Human B-t
41	155	91.7	32	3	AAW80234	AAW80234 Human B-t
42	154	91.1	32	2	AAW51306	AAW51306 Human B-t
43	154	91.1	32	3	AAW80214	AAW80214 Human B-t
44	151	89.3	32	2	AAW51273	AAW51273 Human B-t
45	151	89.3	32	3	AAW80243	AAW80243 Human B-t

ALIGNMENTS

RESULT 1

ID AAR40861 standard; protein; 32 AA.

AC AAR40861;

DT 14-MAR-1994 (first entry)

DE BNP.

KW BNP; brain natriuretic peptide; transformation; expression; cloning; puc119; protease V8.

OS Homo sapiens.

PN JP05207891-A.

PD 20-AUG-1993.

PF 08-MAR-1991; 91UP-00043641.

PR 08-MAR-1991; 91UP-00043641.

PA (SHIO) SHIONOGI & CO LTD.

DR WPI, 1993-297469/38.

DT N-PSDB; AAQ47829.

PT Brain natriuretic peptide prepn. - by forming fused peptide contg. desired sequence, cleaving with restriction enzyme and collecting desired peptide.

PS Disclosure; Page 8; 11p; Japanese.

CC The prepn. of BNP comprises: (a) obtaining a fused protein protein of formula X-Glu-BNP, where X is a leader sequence of 70-170 amino acids (AAW45761); (b) cleaving the fused protein with a restriction enzyme that can cleave between Glu and BNP. (c) collecting BNP. The BNP sequence is shown in (AAQ47829) and the Glu-BNP sequence is given in (AAQ47831)

CC shown in (AAQ47829) and the Glu-BNP sequence is given in (AAQ47831)

CC shown in (AAQ47829) and the Glu-BNP sequence is given in (AAQ47831)

CC shown in (AAQ47829) and the Glu-BNP sequence is given in (AAQ47831)

CC shown in (AAQ47829) and the Glu-BNP sequence is given in (AAQ47831)

CC shown in (AAQ47829) and the Glu-BNP sequence is given in (AAQ47831)

CC shown in (AAQ47829) and the Glu-BNP sequence is given in (AAQ47831)

CC shown in (AAQ47829) and the Glu-BNP sequence is given in (AAQ47831)

CC shown in (AAQ47829) and the Glu-BNP sequence is given in (AAQ47831)

CC shown in (AAQ47829) and the Glu-BNP sequence is given in (AAQ47831)

Db 1 SPKMWGSGCGFGRKMDRISSSGIGCKVLRH 32

RESULT 2
AAR34301
ID AAR34301 standard; protein; 32 AA.

AC AAR34301;

DT 28-UTL-1993 (first entry)

DE Mutated hBNP.

KM Wild type; brain natriuretic peptide; BNP; modify; Asp-Pro.

OS Homo sapiens.

PN JP05056794-A.

PD 09-MAR-1993.

PF 03-SEP-1991; 91JP-00222783.

PR 03-SEP-1991; 91JP-00222783.

PA (DAI-) DAICHI KAGAKU YAKUHIH KK.
(DAUC) DAICHI PHARM CO LTD.

DR WPI; 1993-120386/15.

XX Physiological active peptide prep. e.g. human brain natriuretic
PT peptide - by culturing transformed cells having gene which encodes fused
PT protein of active and protective peptide(s), collecting and cleaving
PT protein.

PS Disclosure; Page 6; 16pp; Japanese.

XX The sequences given in AAR34301-02 are mutated brain natriuretic peptides
CC (BNP). These peptides have been modified such that the Asp in the N-
CC terminal Asp-Pro linkage may be replaced by Ser or may be deleted

XX Sequence 32 AA;

Query Match 100.0%; Score 169; DB 2; Length 32;
Best Local Similarity 100.0%; Pred. No. 1e-16;
Matches 32; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 SPKMWGSGCGFGRKMDRISSSGIGCKVLRH 32
Db 1 SPKMWGSGCGFGRKMDRISSSGIGCKVLRH 32

RESULT 3
AAR36381
ID AAR36381 standard; protein; 32 AA.

AC AAR36381;

DT 29-UTL-1993 (first entry)

DE Recombinant hBNP.

XX Plasmid; fusion peptide; murine; rat; interleukin 1; IL-1; human;
KW brain natriuretic peptide; hBNP; recombinant; BNP.

XX Synthetic.

OS Key Location/Qualifiers

FT Misc-difference 1 /note= "May be absent"

PN JP05068581-A.

XX

PD 23-MAR-1993.

XX 10-SEP-1991; 91JP-00230597.

XX 10-SEP-1991; 91JP-00230597.

XX (DAI-) DAICHI KAGAKU YAKUHIH KK.
(DAUC) DAICHI PHARM CO LTD.

DR WPI; 1993-130645/16.

XX Prepn. of physiologically active peptide without aspartic acid-proline
PT sequence - comprises gene recombination with cell transformation by
PT specified expression vector.

PS Claim 3; Page 6; 17pp; Japanese.

XX This sequence represent a recombinant human brain natriuretic peptide
CC (hBNP). This protein was encoded by the fragments of plasmids given in
CC Q4110-04 which encode fusion peptides of murine or rat interleukin 1 (IL-
CC 1) fused to hBNP. Fusion genes of this kind can be used to express
CC recombinant BNP which lacks the Asp-Pro N-terminal bond. The Asp residue
CC may be replaced by Ser or may be absent

XX Sequence 32 AA;

Query Match 100.0%; Score 169; DB 2; Length 32;
Best Local Similarity 100.0%; Pred. No. 1e-16;
Matches 32; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 SPKMWGSGCGFGRKMDRISSSGIGCKVLRH 32
Db 1 SPKMWGSGCGFGRKMDRISSSGIGCKVLRH 32

RESULT 4
AAW70090
ID AAW70090 standard; peptide; 32 AA.

AC AAW70090;

DT 28-OCT-1998 (first entry)

DE Brain natriuretic peptide (BNP) 1.

XX BNP; brain natriuretic peptide; cardiac disease; cardiac hypertrophy;
KW chronic heart failure; ischaemic cardiac disease; arrhythmia; CGMP;
KW pulmonary blood circulation; haemodynamic property.

XX Unidentified.

OS WO9834636-A1.

PN 13-AUG-1998.

PD 05-FEB-1998; 98WO-JP000483.

PR 05-FEB-1997; 97JP-00022594.

PA (SUNR) SUNTORY LTD.

XX Inomata N, Yamaki A, Furuya M, Hidaka T;

DR WPI; 1998-446949/38.

XX Drug composition comprises natriuretic peptide(s) - for safe treatment of
PT cardiac hypertrophy associated diseases and chronic heart failure.

PS Example; Page 23; 35pp; Japanese.

XX This represents a brain natriuretic peptide (BNP) sequence. The invention
CC provides a composition for treating cardiac diseases associated with
CC cardiac hypertrophy. The composition comprises an active ingredient

CC capable of binding to the peptide receptor of GC-A and promoting
 CC production of cGMP. The drug composition may be used clinically to treat
 CC cardiac diseases caused by cardiac hypertrophy, including chronic heart
 CC failure, ischaemic cardiac diseases and arrhythmia. The active substance
 CC can bind to the natriuretic peptide receptor of GC-A and promote
 CC production of cGMP, effectively preventing cardiac hypertrophy and
 CC leading to improvement of the pulmonary blood circulation. The substance
 CC does not affect haemodynamic properties, blood pressure, heart beat and
 CC urine volume
 CC
 SQ Sequence 32 AA;
 SQ
 Query Match 100.0%; Score 169; DB 2; Length 32;
 Best Local Similarity 100.0%; Pred. No. 1e-16;
 Matches 32; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 SPKMWQSGGCGFRKMDRISSSSGLGCKVLRH 32
 1 SPKMWQSGGCGFRKMDRISSSSGLGCKVLRH 32
 Db
 RESULT 5
 AAM67040
 ID AAM67040 standard; peptide; 32 AA.
 XX
 AC AAM67040;
 XX
 DT 15-DEC-1998 (first entry)
 XX
 DE Brain natriuretic peptide (BNP).
 XX
 KW atrial natriuretic peptide; brain natriuretic peptide; ANP; BNP;
 KW lipophilic substituent; hypertension; congestive heart failure; oedema;
 KW renal disorder.
 XX
 OS Mammalia.
 XX
 OS
 XX
 Key Location/Qualifiers
 FT 2..32 /note= "this fragment having a lipophilic group attached
 FT to it is claimed in Claim 33"
 FT
 FT Region
 FT 3..32 /note= "this fragment having a lipophilic group attached
 FT to it is claimed in Claim 33"
 FT
 FT Region
 FT 4..32 /note= "this fragment having a lipophilic group attached
 FT to it is claimed in Claim 33"
 FT
 FT Region
 FT 5..32 /note= "this fragment having a lipophilic group attached
 FT to it is claimed in Claim 33"
 FT
 FT Region
 FT 6..32 /note= "this fragment having a lipophilic group attached
 FT to it is claimed in Claim 33"
 FT
 FT Region
 FT 7..32 /note= "this fragment having a lipophilic group attached
 FT to it is claimed in Claim 33"
 FT
 FT Region
 FT 8..32 /note= "this fragment having a lipophilic group attached
 FT to it is claimed in Claim 33"
 FT
 FT Region
 FT 9..32 /note= "this fragment having a lipophilic group attached
 FT to it is claimed in Claim 33"
 FT
 FT Region
 FT 10..26 /note= "this fragment having a lipophilic group attached
 FT to it is claimed in Claim 33"
 FT
 FT Disulfide-bond
 FT 10..26 /label= disulphide_bond
 FT
 XX
 XX WO9845329-A1.
 XX
 XX 15-OCT-1998.
 XX
 XX 06-APR-1998; 98WO-DK000142.
 XX
 XX 04-APR-1997; 97US-0043400P.
 XX

PA (NOVO) NOVO-NORDISK AS.
 XX
 XX Huusfeldt PO, Madsen K, Knudsen LB;
 PI
 XX WPI; 1998-557474/47.
 DR
 XX
 PT Lipophilic derivatives of atrial and brain natriuretic peptides - notably
 PT as amides, prolong activity, use in hypertension, congestive heart
 PT failure, renal disorders, oedema, and hepatic cirrhosis.
 XX
 XX Claim 32; Page 1-2; 23pp; English.
 XX
 PS
 CC The invention relates to natriuretic derivatives, containing a lipophilic
 CC substituent attached to any one amino acid residue. Also new are
 CC natriuretic derivatives as above, but with two attached lipophilic
 CC substituents. Atrial natriuretic (ANP) and brain natriuretic (BNP)
 CC peptides are already used in treatment of various diseases, and it is
 CC believed that the lipophilic derivatives will have similar uses. These
 CC diseases include hypertension, congestive heart failure, oedema, renal
 CC disorders, and hepatic cirrhosis. The lipophilic group protects the
 CC peptide from metabolic breakdown, increasing the duration of action. The
 CC present sequence represents BNP
 CC
 XX
 SQ Sequence 32 AA;
 SQ
 Query Match 100.0%; Score 169; DB 2; Length 32;
 Best Local Similarity 100.0%; Pred. No. 1e-16;
 Matches 32; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 SPKMWQSGGCGFRKMDRISSSSGLGCKVLRH 32
 1 SPKMWQSGGCGFRKMDRISSSSGLGCKVLRH 32
 Db
 RESULT 6
 AAB82550
 ID AAB82550 standard; peptide; 32 AA.
 XX
 AC AAB82550;
 XX
 DT 17-SEP-2001 (first entry)
 XX
 DE Human brain natriuretic peptide.
 XX
 KW Brain natriuretic peptide; BNP; Dendroaspis natriuretic peptide; DNP;
 KW human; snake venom; diuretic; vasodilator; renin-suppressor;
 KW heart failure; therapy.
 XX
 OS Homo sapiens.
 XX
 OS
 XX
 Key Location/Qualifiers
 FT Disulfide-bond 10..25
 FT
 FT WO200144284-A2.
 XX
 PD 21-JUN-2001.
 PD
 PF 15-DEC-2000; 2000WO-US034080.
 PF
 XX 17-DEC-1999; 99US-00466268.
 XX
 XX (MAYO-) MAYO FOUND MEDICAL EDUCATION & RES.
 PA
 XX Burnett J, Liley O;
 XX
 XX WPI; 2001-457339/49.
 DR
 XX
 XX Fusion peptides comprising Dendroaspis natriuretic peptides, useful for
 PT treating heart failure and as vasodilators, renin-suppressors and
 PT natriuretics or diuretics.
 XX
 XX Disclosure; Fig 1; 81pp; English.
 XX

CC The present sequence is that of human brain natriuretic peptide (BNP).
 CC The invention provides fusion peptides comprising a biologically active
 CC portion of Dendroaspis natriuretic peptide (DNP). DNP is obtained from
 CC the venom of the green mamba snake, Dendroaspis angusticeps. It contains
 CC a 17-amino acid disulfide ring structure similar to that of BNP. Claimed
 CC methods of treating, inhibiting or preventing heart failure in a mammal
 CC (human, rat, mouse, dog, cattle, horse, sheep, goat or cat) involve
 CC administering DNP or a chimeric peptide including a portion of DNP (see
 CC AAB82543 and AAB82544) and the N-terminal portion of especially human BNP
 CC or C-type natriuretic peptide. Such peptides may also be used to treat
 CC acute or chronic kidney failure, hypertension, cirrhosis of the liver,
 CC nephrotic syndrome and other oedematous states
 XX

SO Sequence 32 AA:
 Query Match 100.0%; Score 169; DB 4; Length 32;
 Best Local Similarity 100.0%; Pred. No. 1e-16;
 Matches 32; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 SPMVQSGGCFGRKMDRISSSSGLGCKVLRH 32
 DB 1 SPMVQSGGCFGRKMDRISSSSGLGCKVLRH 32

RESULT 7
 AAB91333
 ID AAB91333 standard; peptide; 32 AA.
 XX AAB91333;
 AC AAB91333;
 XX 22-JUN-2001 (first entry)
 DT 22-JUN-2001 (first entry)
 DE Brain natriuretic peptide (BNP) SEQ ID NO:509.
 XX Protection; endogenous therapeutic peptide; peptidase; conjugation;
 KM blood component; modification; succinimidyl; maleimido group; amino;
 KW hydroxyl; thiol; hormone; growth factor; neurotransmitter.
 XX Homo sapiens.
 OS Synthetic.
 XX WO200069900-A2.
 PN 23-NOV-2000.
 PD 17-MAY-2000; 2000WO-US013576.
 PF 17-MAY-1999; 99US-0134406P.
 PR 10-SEP-1999; 99US-0153406P.
 PR 15-OCT-1999; 99US-0159783P.
 XX (COND-) CONJUCHEM INC.
 PA Bridon DP, Ezrin AM, Milner PG, Holmes DL, Thibaudau K;
 PI Bridon DP, Ezrin AM, Milner PG, Holmes DL, Thibaudau K;
 PI WPI; 2001-112059/12.
 DR Modifying and attaching therapeutic peptides to albumin prevents
 PT peptidase degradation, useful for increasing length of in vivo activity.
 XX Disclosure; Page 366; 733pp; English.

CC The present invention describes a modified therapeutic peptide (I)
 CC comprising a therapeutically active amino acid region (II) and a
 CC reactive group (II) (e.g. succinimidyl and maleimido groups) attached to
 CC a less therapeutically active amino acid region (IV), which covalently
 CC bonds with amino/hydroxyl/thiol groups on blood components to form a
 CC peptidase stabilised therapeutic peptide composed of 3-50 amino acids.
 CC (I) are useful for modifying therapeutic peptides e.g. hormones, growth
 CC factors and neurotransmitters, to protect them from peptidase activity in
 CC vivo for the treatment of various disorders. Endogenous therapeutic
 CC peptides are not suitable as drug candidates as they require frequent
 CC administration due to rapid degradation by peptidases in the body.
 CC administration due to rapid degradation by peptidases in the body.

CC Modifying and attaching therapeutic peptides to albumin prevents or
 CC reduces the action of peptidases to increase length of activity (half
 CC life) and specifically as bonding to large molecules decreases
 CC intracellular uptake and interference with physiological processes.
 CC AAB90829 to AAB92441 represent peptides which can be used in the
 CC exemplification of the present invention
 XX

SO Sequence 32 AA:
 Query Match 100.0%; Score 169; DB 4; Length 32;
 Best Local Similarity 100.0%; Pred. No. 1e-16;
 Matches 32; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 SPMVQSGGCFGRKMDRISSSSGLGCKVLRH 32
 DB 1 SPMVQSGGCFGRKMDRISSSSGLGCKVLRH 32

RESULT 8
 AAB91340
 ID AAB91340 standard; peptide; 32 AA.
 XX AAB91340;
 AC AAB91340;
 XX 22-JUN-2001 (first entry)
 DT 22-JUN-2001 (first entry)
 DE Brain natriuretic peptide (BNP) SEQ ID NO:516.
 XX Protection; endogenous therapeutic peptide; peptidase; conjugation;
 KM blood component; modification; succinimidyl; maleimido group; amino;
 KW hydroxyl; thiol; hormone; growth factor; neurotransmitter.
 XX Homo sapiens.
 OS Synthetic.
 XX WO200069900-A2.
 PN 23-NOV-2000.
 PD 17-MAY-2000; 2000WO-US013576.
 PF 17-MAY-1999; 99US-0134406P.
 PR 10-SEP-1999; 99US-0153406P.
 PR 15-OCT-1999; 99US-0159783P.
 XX (COND-) CONJUCHEM INC.
 PA Bridon DP, Ezrin AM, Milner PG, Holmes DL, Thibaudau K;
 PI Bridon DP, Ezrin AM, Milner PG, Holmes DL, Thibaudau K;
 PI WPI; 2001-112059/12.
 DR Modifying and attaching therapeutic peptides to albumin prevents
 PT peptidase degradation, useful for increasing length of in vivo activity.
 XX Disclosure; Page 369; 733pp; English.

CC The present invention describes a modified therapeutic peptide (I)
 CC comprising a therapeutically active amino acid region (II) and a
 CC reactive group (II) (e.g. succinimidyl and maleimido groups) attached to
 CC a less therapeutically active amino acid region (IV), which covalently
 CC bonds with amino/hydroxyl/thiol groups on blood components to form a
 CC peptidase stabilised therapeutic peptide composed of 3-50 amino acids.
 CC (I) are useful for modifying therapeutic peptides e.g. hormones, growth
 CC factors and neurotransmitters, to protect them from peptidase activity in
 CC vivo for the treatment of various disorders. Endogenous therapeutic
 CC peptides are not suitable as drug candidates as they require frequent
 CC administration due to rapid degradation by peptidases in the body.
 CC Modifying and attaching therapeutic peptides to albumin prevents or
 CC reduces the action of peptidases to increase length of activity (half
 CC life) and specifically as bonding to large molecules decreases
 CC intracellular uptake and interference with physiological processes.
 CC AAB90829 to AAB92441 represent peptides which can be used in the
 CC exemplification of the present invention

XX
SQ Sequence 32 AA;
Query Match 100.0%; Score 169; DB 4; Length 32;
Best Local Similarity 100.0%; Pred. No. 1e-16;
Matches 32; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 SPKMWQSGGCGFRKMDRISSSSGLGCKVLRH 32
1 SPKMWQSGGCGFRKMDRISSSSGLGCKVLRH 32
Db 1 SPKMWQSGGCGFRKMDRISSSSGLGCKVLRH 32
RESULT 9
AAB45739
ID AAB45739 standard; protein; 32 AA.
XX
AC AAB45739;
XX
DT 15-MAR-2001 (first entry)
XX
DE Human mature BNP.
XX
KW BNP; brain natriuretic peptide; heart failure; vascular restenosis; DNP;
KM D-type natriuretic peptide; antiarteriosclerotic; cardiact; vasospasm;
KW antihypertensive; cardiac muscle; pulmonary hypertension; human; ss.
XX
OS Homo sapiens.
XX
PN WO200071576-A2.
XX
PD 30-NOV-2000.
XX
PF 24-MAY-2000; 2000WO-US014351.
XX
PR 24-MAY-1999; 99US-0135490P.
XX
PA (MAYO-) MAYO FOUND MEDICAL EDUCATION & RES.
PA (SIMA/) SIMARI R.
XX
PI Smart R;
XX
DR WPI; 2001-025135/03.
DR N-PSDB; AAC82677.
XX
PT Inhibiting or preventing heart failure, hypertension and atherosclerosis,
PT involves administering a composition comprising a nucleic acid molecule
PT encoding brain natriuretic peptide in a delivery vehicle.
XX
PS Disclosure; Page 80; 83pp; English.
XX
SQ This invention describes a novel method for inhibiting or preventing (1)
CC heart failure in a mammal, by administering a composition containing a
CC nucleic acid molecule (NAM) comprising a nucleic acid segment encoding
CC brain natriuretic peptide (BNP), D-type natriuretic peptide (DNP) or its
CC chimera, in a delivery vehicle. The invention also describes (1) an
CC isolated and purified NAM (II) comprising a nucleic acid segment encoding
CC a chimeric natriuretic peptide containing at least a portion of DNP; (2)
CC an adeno-associated virus vector (III) comprising a NAM containing a
CC nucleic acid segment encoding BNP, DNP or its chimera operably linked to
CC transcriptional regulatory elements; (3) an adenovirus vector (IV)
CC comprising a NAM containing a nucleic acid segment encoding DNP or its
CC chimera operably linked to transcriptional regulatory elements; and (4) a
CC composition comprising (II), (III), or (IV) and a delivery vehicle. The
CC products of the invention have antiarteriosclerotic, cardiact and
CC antihypertensive activity. The method is useful for inhibiting or
CC preventing heart failure in a mammal, to detect progression of heart failure
CC in a mammal, to detect progression of heart failure
CC in a mammal subjected to brain natriuretic gene therapy, to inhibit or
CC prevent vasospasm and pulmonary hypertension in a mammal. DNP and BNP are
CC also useful for inhibiting or preventing atherosclerosis and vascular
CC restenosis
XX
SQ Sequence 32 AA;

XX
SQ Sequence 32 AA;
Query Match 100.0%; Score 169; DB 4; Length 32;
Best Local Similarity 100.0%; Pred. No. 1e-16;
Matches 32; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 SPKMWQSGGCGFRKMDRISSSSGLGCKVLRH 32
1 SPKMWQSGGCGFRKMDRISSSSGLGCKVLRH 32
Db 1 SPKMWQSGGCGFRKMDRISSSSGLGCKVLRH 32
RESULT 10
AAE12434
ID AAE12434 standard; peptide; 32 AA.
XX
AC AAE12434;
XX
DT 03-JAN-2002 (first entry)
XX
DE Human brain natriuretic peptide (BNP).
XX
KW Prophylaxis; ischaemic heart disease; myocardial infarction; human;
KM ischaemia reperfusion injury; ischaemic heart disease; infarct region;
KM vasotrophic; brain natriuretic peptide; BNP.
XX
OS Homo sapiens.
XX
FH Key Location/Qualifiers
FT Disulfide-bond 10..26
XX
PN US2001027181-A1.
XX
PD 04-OCT-2001.
XX
PF 03-JAN-2001; 2001US-00752724.
XX
PR 31-MAR-2000; 2000JP-00098134.
XX
PA (KITA/) KITAKAZE M.
XX
PI Kitakaze M;
XX
DR WPI; 2001-638528/73.
XX
PT Composition for the treatment or prophylaxis of ischemic heart disease
PT i.e. myocardial infarction, comprises a substance which can increase
PT intracellular cGMP production by acting on a natriuretic peptide
PT receptor.
XX
PS Disclosure; Page 4; 9pp; English.
XX
SQ The invention relates to a pharmaceutical composition for the treatment
CC or prophylaxis of ischaemic heart disease, comprises a substance as an
CC active ingredient, which can increase intracellular cGMP production by
CC acting on a natriuretic peptide receptor and which has an effect of
CC reducing an infarct region. The composition is useful for suppressing
CC ischaemia reperfusion injury in the treatment of ischaemic heart disease,
CC preferably myocardial infarction. The present sequence is human brain
CC natriuretic peptide (BNP)
XX
SQ Sequence 32 AA;
Query Match 100.0%; Score 169; DB 4; Length 32;
Best Local Similarity 100.0%; Pred. No. 1e-16;
Matches 32; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 SPKMWQSGGCGFRKMDRISSSSGLGCKVLRH 32
1 SPKMWQSGGCGFRKMDRISSSSGLGCKVLRH 32
Db 1 SPKMWQSGGCGFRKMDRISSSSGLGCKVLRH 32
RESULT 11
ABG98205
ID ABG98205 standard; peptide; 32 AA.

XX ABG98205;
XX 08-JAN-2003 (first entry)
XX Human brain natriuretic peptide (BNP-32).
XX
XX Human; natriuretic peptide; NP; endochondral ossification;
XX bone formation; cartilage; bone; signalling pathway; FGF;
XX fibroblast growth factor; cardiovascular homeostasis; diuresis;
XX natriuretic; vasodilation; atrial natriuretic peptide; ANP;
XX brain natriuretic peptide; BNP; C-type natriuretic peptide; CNP;
XX deoxaasins natriuretic peptide; DNP; NPR-A; NPR-B;
XX guanylyl cyclase domain; CGMP; neutral endopeptidase; NEP;
XX skeletal dysplasia; achondroplasia; osteopathic.
XX
XX Homo sapiens.
XX WO200274234-A2.
XX 26-SEP-2002.
XX 20-MAR-2002; 2002WO-IL000229.
XX 20-MAR-2001; 2001IL-00142118.
XX 20-MAR-2001; 2001US-0276939P.
XX (PROC-) PROCHON BIOTECH LTD.
XX Golembio M, Yayon A;
XX WPI; 2002-750515/81.
XX
XX Pharmaceutical composition useful in the treatment of skeletal dysplasias
XX e.g. achondroplasia comprises at least one natriuretic peptide.
XX
XX Claim 4; Fig 3; 41pp; English.
XX
XX The invention discloses a pharmaceutical composition comprising at least
XX one natriuretic peptide (NP), or its variant, and a carrier or excipient.
XX Endochondral ossification is a fundamental mechanism for bone formation,
XX whereby cartilage is replaced by bone. Endochondral ossification is the
XX result of the concerted action of several signalling pathways, most
XX notably the pathway triggered by the activation of the fibroblast growth
XX factor (FGF). Natriuretic peptides are also known for their role in
XX cardiovascular homeostasis; diuresis; natriuresis and vasodilation. Four
XX isoforms exist - atrial natriuretic peptide (ANP), brain natriuretic
XX peptide (BNP), C-type natriuretic peptide (CNP) and the deoxaasins
XX natriuretic peptide (DNP). NP's effect their biological role through two
XX receptors, NPR-A and NPR-B, having cytoplasmic guanylyl cyclase domains
XX which are activated upon ligand binding and lead to accumulation of
XX intracellular cGMP. They are cleaved by neutral endopeptidases (NEPs) and
XX inhibition of the NEPs increases the concentration of the NPs in the
XX circulation. The invention discloses compositions comprising NP secreting
XX cells and methods for treating skeletal dysplasias involving
XX transplanting or implanting the natriuretic peptide secreting cells. The
XX NP secreting cells are useful in the manufacture of a medicament for the
XX treatment of skeletal dysplasia (e.g. achondroplasia), for elongation of
XX abnormal bone and for increasing the size of bone growth plate in
XX abnormal bone (e.g. limb bone). The compositions induce bone elongation
XX in abnormal bone growth and enhance NP stabilisation in circulation. The
XX sequences presented in ABG98202-ABG98272 are the CNP peptide and
XX variants, with differing levels of activity, designed from it. The
XX degenerate peptide is presented in ABG98206
XX
XX Sequence 32 AA;
XX
XX Query Match 100.0%; Score 169; DB 5; Length 32;
XX Best Local Similarity 100.0%; Pred. No. 1e-16;
XX Matches 32; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
XX 1 SPKXWQSGCFCRKMDRISSSSGLCCKYLRRH 32
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

DB 1 SPKXWQSGCFCRKMDRISSSSGLCCKYLRRH 32
RESULT 12
ADA00765
ID ADA00765 standard; peptide; 32 AA.
XX
XX ADA00765;
XX 06-NOV-2003 (first entry)
XX
XX Human natriuretic peptide BNP.
XX
XX Human; natriuretic protein; atrial natriuretic peptide; ANP; ANF;
XX hypotensive; hepatotropic; nephrotropic; cardiac; vasodilator;
XX hepatotropic; respiratory; clearance receptor;
XX natriuretic peptide receptor; hNPR-C; hANF(1-28); human A receptor;
XX hNPR-A; neutral endopeptidase 11.24; NEP; natriuresis; diuresis;
XX vasodilation; renin-angiotensin II; aldosterone; electrolyte imbalance;
XX hypertension; renovascular hypertension; congestive heart failure; CHF;
XX nephrotic syndrome; hepatic cirrhosis; pulmonary disease; renal failure;
XX uroclatin.
XX
XX Homo sapiens.
XX US6525022-B1.
XX 25-FEB-2003.
XX 16-SEP-1998; 98US-00154390.
XX 12-NOV-1993; 93US-00152994.
XX 04-NOV-1994; 94MO-US012581.
XX 06-JAN-1995; 95US-00362552.
XX 11-APR-1995; 95US-00419877.
XX 06-JUN-1995; 95US-00470846.
XX (GENH) GENENTECH INC.
XX
XX Lowe DG, Cunningham BC, Oare D, McDowell RS, Burnier JP;
XX WPI; 2003-553629/52.
XX
XX Novel variant of atrial natriuretic factor, useful as therapeutic agent
XX for treating hypertension, congestive heart failure, nephrotic syndrome,
XX hepatic cirrhosis, pulmonary disease and renal failure.
XX disclosure; Fig 1; 51pp; English.
XX
XX The invention relates to an atrial natriuretic factor (ANF, also known as
XX ANP, a natriuretic peptide) comprising one or more amino acid
XX substitutions selected from Gly9Thr, Gly9a, Gly9Arg, Arg11Ser, Arg11Asp,
XX Gly16Arg, Gly16Lys, Gly16Gln, Gly16His, and Gly16b-amidinophenyl Ala.
XX Also included is a composition comprising nucleic acid encoding the ANF
XX variant. The ANF has a decreased binding affinity for the human clearance
XX receptor, natriuretic peptide receptor (ANPR)-C, compared to wild-type
XX hANP(1-28) and an equal or higher binding affinity for the human A
XX receptor, hNPR-A, compared to wild-type hANP(1-28). The binding affinity
XX for hNPR-C is less than 50% or 10% of the affinity of wild-type ANF. The
XX ANF variant has an increased half-life relative to wild-type hANP(1-28)
XX when incubated with neutral endopeptidase 11.24 (NEP). The ANF variant is
XX useful for inducing natriuresis, diuresis or vasodilation or inhibit
XX renin-angiotensin II and aldosterone release and as therapeutic agents in
XX the treatment of various pathological conditions associated with water or
XX electrolyte imbalance and hypertension, especially renovascular
XX hypertension, congestive heart failure (CHF), nephrotic syndrome and
XX hepatic cirrhosis, pulmonary disease and renal failure due to ineffective
XX renal perfusion or reduced glomerular filtration rate, to modulate the
XX activity of other diuretic, natriuretic or vasorelaxant compounds by
XX binding to alternate receptors, stimulating receptor turnover, or
XX providing alternate substrates for degradative enzyme of receptor
XX activity and inhibiting these enzymes or receptors. The present sequence
XX is a human natriuretic peptide.

Query Match 100.0%; Score 169; DB 6; Length 32;
 Best Local Similarity 100.0%; Pred. No. 1e-16;
 Matches 32; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 SPKMWQSGGCFGRKMDRISSSSGLGCKVLRH 32
 DB 1 SPKMWQSGGCFGRKMDRISSSSGLGCKVLRH 32

RESULT 15

ADD55931
 ID ADD55931 standard; peptide; 32 AA.

XX AC ADD55931;

XX DT 15-JAN-2004 (first entry)

XX DE Human B-type natriuretic peptide (BNP).

XX KW human; congestive heart failure; CHF; natriuretic peptide;
 XX B-type natriuretic peptide; BNP.

XX OS Homo sapiens.

XX FH Key Location/Qualifiers

XX FT Disulfide-bond 10..26

XX PN WO2003079979-A2.

XX PD 02-OCT-2003.

XX PF 18-MAR-2003; 2003WO-US008215.

XX PR 18-MAR-2002; 2002US-0364736P.

XX PA (SCIO-) SCIOS INC.

XX PI Schreiner GF;

XX DR WPI; 2003-767771/72.

XX PT Treating congestive heart failure (CHF) in a mammal, comprises
 XX PT administration of a natriuretic peptide.

XX PS Disclosure; SEQ ID NO 1; 58pp; English.

XX CC The invention comprises a method for treating congestive heart failure
 CC (CHF), the method involves administering a natriuretic peptide (e.g.
 CC human B-type natriuretic peptide). The method is useful for treating
 CC congestive heart failure in a mammal that is in a compensated or
 CC decompensated state of congestive heart failure. The present amino acid
 CC sequence represents the human B-type natriuretic peptide (BNP).

XX SQ Sequence 32 AA;

Query Match 100.0%; Score 169; DB 7; Length 32;
 Best Local Similarity 100.0%; Pred. No. 1e-16;
 Matches 32; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 SPKMWQSGGCFGRKMDRISSSSGLGCKVLRH 32
 DB 1 SPKMWQSGGCFGRKMDRISSSSGLGCKVLRH 32

Search completed: March 29, 2004, 14:41:27
 Job time : 56 secs

GenCore version 5.1.6
Copyright (c) 1993 - 2004 Compugen Ltd.

OM protein - protein search, using sw model

Run on: March 29, 2004, 14:37:49 ; Search time 21 Seconds

(without alignments)
146.578 Million cell updates/sec

Title: US-09-902-517-49

Perfect score: 169
Sequence: 1 SPKXVGGSGCFGRMDRISSSSGLGCKVLRH 32

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 283366 seqs, 96191526 residues

Total number of hits satisfying chosen parameters: 283366

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%

Listing first 45 summaries

Database :

1: p1r1:*
2: p1r2:*
3: p1r3:*
4: p1r4:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	ID	Description
1	169	100.0	134	1	AMHUB
2	124	73.4	103	2	natriuretic peptide
3	123	72.8	105	2	adosterone secret
4	122	72.2	131	2	brain natriuretic
5	122	72.2	131	2	brain natriuretic
6	106	62.7	27	2	brain natriuretic
7	101	59.8	140	1	UCL081
8	87	51.5	149	1	AMDG
9	87	51.5	150	1	SI3107
10	87	51.5	151	1	AMHU
11	87	51.5	152	1	AMBO
12	87	51.5	153	1	SI4873
13	86	50.9	38	2	SI1361
14	83	49.1	153	1	AMRB
15	82	48.5	121	1	AS0162
16	82	48.5	152	1	AMRT
17	82	48.5	152	1	AMMS
18	82	48.5	161	4	155480
19	81	47.9	126	1	SI4872
20	79	46.7	126	1	AMHUC
21	79	46.7	126	1	AMH55
22	79	46.7	126	1	SI2988
23	79	46.7	126	1	AS5688
24	78	46.2	22	2	AS5418
25	77	45.6	36	2	SI5821
26	77	45.6	121	2	AS9144
27	77	45.6	121	2	149548
28	76	45.0	118	2	BS4119
29	75	44.4	115	1	SI5822

30	74	43.8	22	2	A36399	C-type natriuretic
31	74	43.8	27	2	A3431	atrial natriuretic
32	74	43.8	129	1	A54119	c-type natriuretic
33	72	42.6	22	2	UJ0581	natriuretic peptide
34	72	42.6	30	2	S01657	atrial natriuretic
35	72	42.6	145	1	UJ0947	atrial natriuretic
36	70	41.4	135	1	A61244	natriuretic peptide
37	69	40.8	38	2	A42974	natriuretic peptide
38	54	32.0	718	2	AD2355	polyribonucleotide
39	52	30.8	111	2	AS2842	conserved hypother
40	52	30.8	111	2	C37619	hypothetical prote
41	52	30.8	1067	2	T18196	pol protein - silk
42	51	30.2	594	2	T34855	probable glyoxylat
43	50	28.6	148	2	D54760	year protein - Esc
44	50	28.6	718	2	S74509	polyribonucleotide
45	49	29.0	383	2	A49562	cartilage glycopro

ALIGNMENTS

RESULT 1

AMHUB

natriuretic peptide B precursor [validated] - human

N:Alternate names: brain natriuretic factor-32 (BNF-32); brain natriuretic protein par

N:Contains: brain alpha natriuretic peptide; brain gamma natriuretic factor

C/Species: Homo sapiens (man)

C/Date: 07-Sep-1990 #sequence_revision 02-Dec-1994 #text_change 08-Dec-2000

C/Accession: A36736; A30163; A34143; A34661; B34661

R:Seilhamer, J. J.; Arfsten, A.; Miller, J. A.; Lundquist, P.; Scarborough, R. M.; Lewis

Biochem. Biophys. Res. Commun. 165, 650-658, 1989

A>Title: Human and canine gene homologs of porcine brain natriuretic peptide.

A:Reference number: A36736; MUID:90086474; PMID:2597152

A:Accession: A36736

A:Molecule type: DNA

A:Residues: 1-134 <SD>

A:Cross-references: GB:M31776; NID:G179514; PID:AAA35603.1; PID:G179515

R:Gudch, T.; Maekawa, K.; Kojima, M.; Minamino, N.; Kangawa, K.; Matsuo, H.

Biochem. Biophys. Res. Commun. 159, 1427-1434, 1989

A>Title: Cloning and sequence analysis of cDNA encoding a precursor for human brain n

A:Reference number: A30163; MUID:89193743; PMID:2522777

A:Accession: A30163

A:Molecule type: mRNA

A:Residues: 1-134 <SD>

A:Cross-references: GB:M31776; NID:G179514; PID:AAA35603.1; PID:G179515

R:Kambayashi, Y.; Nakao, K.; Mukoyama, M.; Saito, Y.; Ogawa, Y.; Shiono, S.; Inouye, I

FEBS Lett. 259, 341-345, 1990

A>Title: Isolation and sequence determination of human brain natriuretic peptide in h

A:Reference number: A34143; MUID:90092577; PMID:2136732

A:Accession: A34143

A:Molecule type: protein

A:Residues: 103-134 <RM>

R:Rino, J.; Tateyama, H.; Minamino, N.; Kangawa, K.; Matsuo, H.

Biochem. Biophys. Res. Commun. 167, 693-700, 1990

A>Title: Isolation and identification of human brain natriuretic peptides in cardiac

A:Reference number: A30161; MUID:90011249; PMID:2138890

A:Accession: A34661

A:Molecule type: protein

A:Residues: 103-134 <HI>

C/Genetics:

A:Gene: GDB:NPPB

A:Cross-references: GDB:127884; OMIM:600295

A:Map position: 1p36-1p36

A:introns: 44/3; 130/1

C:Superfamily: natriuretic peptide A precursor

C:Keywords: brain; diuretic; hormone; natriuretic; osmoregulation

F:1-26/Domain: signal sequence #status predicted <SIG>

F:27-134/Product: brain gamma natriuretic factor #status experimental <GNF>

F:103-134/Product: brain alpha natriuretic peptide #status experimental <ANP>

F:112-128/Disulfide bonds: #status predicted

RESULT 6

brain natriuretic peptide - pig
 JCI081
 C:Species: Sus scrofa domestica (domestic pig)
 C>Date: 27-Aug-1995 #sequence_revision 19-Oct-1995 #text_change 16-Feb-1997
 C/Accession: JCI081
 R:Chen, H.; Zhang, J.; Wang, Q.S.; Cui, H.; Tang, J.
 J. Fudan Univ. (Natur. Sci.) 30, 413-416, 1991
 A:Title: Chemical synthesis and cloning of the porcine brain natriuretic gene.
 A:Reference number: JCI081
 A/Accession: JCI081
 A:Molecule type: DNA
 A:Residues: 1-27 <CH>
 A>Note: The translation of the start codon ATG is not given in this paper
 C/Genetics:
 A:Gene: bnp
 C:Superfamily: natriuretic peptide A precursor
 C/Keywords: brain; natriuretic

Query Match 62.7%; Score 106; DB 2; Length 27;
 Best Local Similarity 76.0%; Pred. No. 1.8e-08;
 Matches 19; Conservative 3; Mismatches 3; Indels 0; Gaps 0;

Qy 8 SGCGRKMDRISSSGGLGCKVLRH 32
 Db 3 SGCGRKMDRISGSLGCKVLRH 27

RESULT 7

alpha-atrial natriuretic peptide precursor - chicken
 S14320
 C:Species: Gallus gallus (chicken)
 C>Date: 10-Sep-1999 #sequence_revision 10-Sep-1999 #text_change 16-Jun-2000
 C/Accession: S14320; A31509
 R:AKizuki, N.; Kangawa, K.; Minamino, N.; Matsuo, H.
 FEBS Lett. 280, 357-362, 1991
 A:Title: Cloning and sequence analysis of complementary DNA encoding a precursor for ch
 A:Reference number: S14320; MUID:91192169; PMID:1826483
 A/Accession: S14320
 A:Status: preliminary
 A:Molecule type: mRNA
 A:Residues: 1-140 <AK>
 A/Cross-references: GB:X57702; NID:G63648; PID:CAA40879.1; PID:G3805902
 R:Miyaoka, A.; Minamino, N.; Kangawa, K.; Matsuo, H.
 Biochem. Biophys. Res. Commun. 155, 1330-1337, 1988
 A:Title: Identification of a 29-amino acid natriuretic peptide in chicken heart.
 A:Reference number: A31509; MUID:89025805; PMID:2972276
 A/Accession: A31509
 A:Molecule type: protein
 A:Residues: 112-140 <MY>
 C:Superfamily: natriuretic peptide A precursor
 F:118-134/Disulfide bonds: #status experimental

Query Match 59.8%; Score 101; DB 1; Length 140;
 Best Local Similarity 54.8%; Pred. No. 4.6e-07;
 Matches 17; Conservative 8; Mismatches 6; Indels 0; Gaps 0;

Qy 2 PRMVGGSGFGKMDRISSSGGLGCKVLRH 32
 Db 110 PRMVGGSGFGKMDRISGSLGCKVLRH 140

RESULT 8

atrial natriuretic peptide precursor - dog
 N1A1ternate names: ANP; atrial natriuretic polypeptide
 C:Species: Canis lupus familiaris (dog)
 C>Date: 31-Mar-1988 #sequence_revision 31-Mar-1988 #text_change 18-Jun-1999
 C/Accession: A25302
 R:Okawa, S.; Inai, M.; Imazuka, C.; Tawarat, Y.; Nakazato, H.; Matsuo, H.
 Biochem. Biophys. Res. Commun. 132, 892-899, 1985
 A:Title: Structure of dog and rabbit precursors of atrial natriuretic polypeptides deduc
 A:Reference number: A50119; MUID:86076957; PMID:2934062

A/Accession: A25302

A:Molecule type: mRNA
 A:Residues: 1-149 <OK>
 A/Cross-references: GB:M2045; NID:G163900; PID:AAA30828.1; PID:G163901
 C:Superfamily: natriuretic peptide A precursor
 C/Keywords: atrium; diuretic; hormone; natriuretic; osmoregulation
 F:1-23/Domain: signal sequence #status predicted <SIG>
 F:24-149/Product: gamma atrial natriuretic factor #status predicted <ANP>
 F:122-149/Product: alpha atrial natriuretic peptide #status predicted <ANP>
 F:128-144/Disulfide bonds: #status predicted

Query Match 51.5%; Score 87; DB 1; Length 149;
 Best Local Similarity 50.0%; Pred. No. 4.8e-05;
 Matches 15; Conservative 6; Mismatches 9; Indels 0; Gaps 0;

Qy 1 SPMVGGSGFGKMDRISSSGGLGCKVLR 30
 Db 119 APRSLRRSSCFGRMDRIGAGSLGCKNSFR 148

RESULT 9

atrial natriuretic peptide precursor - pig
 S13107
 N/contains: alpha atrial natriuretic peptide; gamma atrial natriuretic factor (cardi
 C:Species: Sus scrofa domestica (domestic pig)
 C>Date: 21-Nov-1993 #sequence_revision 14-Jul-1994 #text_change 11-May-2000
 C/Accession: S13107; A60899
 R:Maegart, H.U.; Appelhans, H.; Gaessen, H.G.; Forssmann, W.G.
 Nucleic Acids Res. 18, 6704, 1990
 A:Title: Nucleotide sequence of a porcine prepro atrial natriuretic peptide (ANP) cDN
 A:Reference number: S13107; MUID:91067478; PMID:2147477
 A/Accession: S13107
 A:Molecule type: mRNA
 A:Residues: 1-150 <MA>
 A/Cross-references: EMBL:X54569; NID:G1893; PID:CAA38480.1; PID:G1894
 R:Forssmann, W.G.; Hock, D.; Lottspich, A.; Henschen, A.; Kreye, V.; Christmann, M.;
 Anat. Embryol. 168, 307-313, 1983
 A:Title: The right auricle of the heart is an endocrine organ. Cardiodilatant as a pept
 A:Reference number: A60899; MUID:84176555; PMID:6689515
 A/Accession: A60899
 A:Molecule type: protein
 A:Residues: 25-54 <FK>
 C:Superfamily: natriuretic peptide A precursor
 C/Keywords: atrium; diuretic; hormone; natriuretic; osmoregulation
 F:1-24/Domain: signal sequence #status predicted <SIG>
 F:25-150/Product: gamma atrial natriuretic factor #status predicted <ANP>
 F:123-150/Product: alpha atrial natriuretic peptide #status predicted <ANP>
 F:129-145/Disulfide bonds: #status predicted

Query Match 51.5%; Score 87; DB 1; Length 150;
 Best Local Similarity 50.0%; Pred. No. 4.8e-05;
 Matches 15; Conservative 6; Mismatches 9; Indels 0; Gaps 0;

Qy 1 SPMVGGSGFGKMDRISSSGGLGCKVLR 30
 Db 120 APRSLRRSSCFGRMDRIGAGSLGCKNSFR 149

RESULT 10

atrial natriuretic peptide A precursor [validated] - human
 N1A1ternate names: ANP; atrial natriuretic factor; atrial natriuretic protein; prepro
 N/contains: atrial alpha natriuretic peptide (ANP); cardiodilatant (atrial gamma natri
 C:Species: Homo sapiens (man)
 C>Date: 15-Nov-1984 #sequence_revision 15-Nov-1984 #text_change 08-Dec-2000
 C/Accession: A22693; B22693; A01424; B29370; A32733; I58054; S14097; I39458; I39459; I
 R:Mermer, M.; Chamberland, M.; Sirotto, D.; Argentin, S.; Drouin, J.; Dixon, R.A.F.; Zyl
 Nature 312, 654-656, 1984
 A:Title: Gene structure of human cardiac hormone precursor, pronatriodilatant.
 A:Reference number: A22693; MUID:85061626; PMID:6095118
 A/Accession: A22693
 A:Molecule type: DNA
 A:Residues: 1-151 <NEM>

A/Cross-references: GB:X01470; NID:G28687; PIDN:CAA25699.1; PID:G825625
 A/Accession: B22693
 A/Molecule type: DNA
 A/Residues: 1-151, 'RR' <NE2>
 A/Note: allelic variant with UGA termination codon replaced by CGA arginine codon
 R/Oikawa, S.; Imai, M.; Ueno, A.; Tanaka, S.; Noguchi, T.; Nakazato, H.; Kangawa, K.; Fu
 Nature 309, 724-726, 1984
 A/Title: Cloning and sequence analysis of cDNA encoding a precursor for human atrial nat
 A/Reference number: A01424; MUID:84219799; PMID:6203042
 A/Accession: A01424
 A/Molecule type: mRNA
 A/Residues: 1-151 <OTK>
 A/Cross-references: GB:K02043; NID:G178629; PIDN:AA59379.1; PID:G178630
 R/Seldman, C.E.; Bloch, K.D.; Klein, K.A.; Smith, J.A.; Seldman, J.G.
 Science 226, 1206-1209, 1984
 A/Title: Nucleotide sequences of the human and mouse atrial natriuretic factor genes.
 A/Reference number: A29370; MUID:85065766; PMID:6542248
 A/Accession: B29370
 A/Molecule type: DNA
 A/Residues: 1-64, 'D', 66-151 <SE1>
 A/Cross-references: GB:K02043
 R/Kangawa, K.; Matsuo, H.
 Biochem. Biophys. Res. Commun. 118, 131-139, 1984
 A/Title: Purification and complete amino acid sequence of alpha-human atrial natriuretic
 A/Reference number: A27733; MUID:84128019; PMID:6230082
 A/Accession: A27733
 A/Molecule type: protein
 A/Residues: 124-151 <XAN>
 R/Nakayama, K.; Ohkubo, H.; Hirose, T.; Inayama, S.; Nakanishi, S.
 Nature 310, 699-701, 1984
 A/Title: mRNA sequence for human cardiolipin-atrial natriuretic factor precursor and
 A/Reference number: 158054; MUID:84295577; PMID:6547996
 A/Accession: 158054
 A/Status: translated from GB/EMBL/DBD
 A/Molecule type: mRNA
 A/Residues: 1-151 <RES>
 A/Cross-references: GB:M0262; NID:G180181; PIDN:AA35669.1; PID:G180182
 R/Vanessa, Y.; Michel, A.; Deschodt-Lanckman, M.
 Eur. J. Biochem. 196, 281-286, 1991
 A/Title: Hydrolysis of intact and Cys-Phe-cleaved human atrial natriuretic peptide in vi
 A/Reference number: S14097; MUID:91176998; PMID:1826098
 A/Accession: S14097
 A/Molecule type: protein
 A/Residues: 124-151 <VAN>
 A/Note: natural and synthetic peptide subjected to kallikrein proteolysis
 R/Ziyan, R.A.; Condra, J.H.; Dixon, R.A.; Seldman, N.G.; Chretien, M.; Nemer, M.; Chambe
 Proc. Natl. Acad. Sci. U.S.A. 81, 6325-6329, 1984
 A/Title: Molecular cloning and characterization of DNA sequences encoding rat and human
 A/Reference number: 139458; MUID:85038509; PMID:6238331
 A/Accession: 139458
 A/Status: preliminary; translated from GB/EMBL/DBD
 A/Molecule type: mRNA
 A/Residues: 119-151, 'RR' <RE2>
 A/Cross-references: GB:K02044; NID:G178631; PIDN:AA51730.1; PID:G178632
 R/Mali, M.; Parmentier, M.; Inagami, T.
 Biochem. Biophys. Res. Commun. 125, 797-802, 1984
 A/Title: Cloning of genomic DNA for human atrial natriuretic factor.
 A/Reference number: 139459; MUID:85096983; PMID:6097248
 A/Accession: 139459
 A/Status: preliminary; translated from GB/EMBL/DBD
 A/Molecule type: DNA
 A/Residues: 1-75 <RE3>
 A/Cross-references: GB:K02399; NID:G178633; PIDN:AA35528.1; PID:G178634
 R/Seldman, C.E.; Bloch, K.D.; Zisfein, U.; Smit, J.; Haber, E.; Homcy, C.J.; Duly, A.D.;
 Hyperemion 7, 31-34, 1985
 A/Title: Molecular studies of the atrial natriuretic factor gene.
 A/Reference number: 139460
 A/Accession: 139460
 A/Status: translated from GB/EMBL/DBD
 A/Molecule type: DNA
 A/Residues: 1-64, 'D', 66-151 <RE4>
 A/Cross-references: GB:M53951; NID:G178636; PIDN:AA35529.1; PID:G178638
 R/Greeneberg, B.D.; Bencen, G.H.; Seldman, J.J.; Lewicki, J.A.; Fiddes, J.C.

Nature 312, 656-658, 1984
 A/Title: Nucleotide sequence of the gene encoding human atrial natriuretic factor prec
 A/Reference number: 137167; MUID:85061627; PMID:6095119
 A/Accession: 137167
 A/Status: translated from GB/EMBL/DBD
 A/Molecule type: DNA
 A/Residues: 26-151 <RE5>
 A/Cross-references: EMBL:X01471; NID:G28690; PIDN:CAA25700.1; PID:G1340150
 C/Comment: Cardiolipin is a vasoconstrictor but not a diuretic or natriuretic.
 C/Genetics:
 A/Genes: GDB:NPRA; ANP; PND
 A/Cross-references: GDB:118727; OMIM:108780
 A/Map position: 1p36-1p36
 A/Intons: 41/3; 150/3
 C/Superfamily: natriuretic peptide A precursor
 C/Keywords: atrium; diuretic; hormone; natriuretic; osmoregulation
 F:1-25/Domain: signal sequence #status predicted <SIG>
 F:26-151/Product: cardiolipin #status predicted <CD>
 F:124-151/Product: atrial alpha natriuretic peptide #status experimental <ANP>
 F:130-146/Duplicate bonds: #status experimental

Query Match 51.5%; Score 87; DB 1; Length 151;
 Best Local Similarity 50.0%; Pred. No. 4.9e-05;
 Matches 15; Conservative 6; Mismatches 9; Indels 0; Gaps 0;

QY 1 SPWMQSGCGFRKMDRISSSGGLGCKYLR 30
 DB 121 APRSRSSCGFRMDRIGAGSLGCSNFR 150

RESULT 11
 AMBO
 atrial natriuretic peptide precursor - bovine
 N/Alternate names: ANP; atrial natriuretic polypeptide
 C/Species: Bos primigenius taurus (cattle)
 C/Date: 30-Jun-1989 #sequence_revision 30-Jun-1989 #text_change 18-Jun-1999
 R/Accession: A90124; A93049; A24247; A26090
 C/Vlaasik, G.P.; Miller, J.; Bencen, G.H.; Lewicki, J.A.
 Biochem. Biophys. Res. Commun. 136, 396-403, 1986
 A/Title: Structure and analysis of the bovine atrial natriuretic peptide precursor ge
 A/Reference number: A90124; MUID:8615505; PMID:2939830
 A/Accession: A90124
 A/Molecule type: DNA
 A/Residues: 1-152 <VLA>
 A/Cross-references: GB:M1145; NID:G162665; PIDN:AA30375.1; PID:G162666
 R/ONG, H.; McNicol, N.; Lazure, C.; Seldman, N.; Chretien, M.; Cantin, M.; De lean, A.
 Life Sci. 38, 1309-1315, 1986
 A/Title: Purification and sequence determination of bovine atrial natriuretic factor.
 A/Reference number: A93049; MUID:86173841; PMID:3007908
 A/Accession: A93049
 A/Molecule type: protein
 A/Residues: 123-150 <ONG>
 C/Genetics:
 A/Intons: 40/3; 149/3
 C/Superfamily: natriuretic peptide A precursor
 C/Keywords: atrium; diuretic; hormone; natriuretic; osmoregulation
 F:1-24/Domain: signal sequence #status predicted <SIG>
 F:25-152/Product: gamma atrial natriuretic factor #status predicted <ANP>
 F:123-150/Product: alpha atrial natriuretic peptide #status experimental <ANP>
 F:129-145/Duplicate bonds: #status predicted

Query Match 51.5%; Score 87; DB 1; Length 152;
 Best Local Similarity 50.0%; Pred. No. 4.9e-05;
 Matches 15; Conservative 6; Mismatches 9; Indels 0; Gaps 0;

QY 1 SPWMQSGCGFRKMDRISSSGGLGCKYLR 30
 DB 120 APRSRSSCGFRMDRIGAGSLGCSNFR 149

RESULT 12
 S14873
 atrial natriuretic peptide precursor - horse

A:Accession: A60735
 A:Molecule type: Protein
 A:Residues: 77-121 <NAK>
 R:DeGnino, L.; Drouin, J.; Nemer, M.
 Mol. Endocrinol. 5, 1292-1300, 1991
 A:Title: Differential expression of natriuretic peptide genes in cardiac and extracardiac
 A:Reference number: 157704; MUID:92123224; PMID:1837590
 A:Accession: 157704
 A:Status: preliminary; translated from GB/EMBL/DBJ
 A:Molecule type: DNA
 A:Residues: 1-121 <RSS>
 A:Cross-references: GB:M60266; NID:G204983; PIDN:AAA41455.1; PID:G204984
 C:Genetics:
 A:Introns: 42/3; 117/1
 C:Superfamily: natriuretic peptide A precursor
 C:Keywords: cardiac muscle; heart
 F:1-26/Domain: signal sequence #status predicted <SIG>
 F:27-121/Product: brain natriuretic factor #status experimental <MAT1>
 F:77-121/Product: brain natriuretic factor BNP-45 #status experimental <MAT2>

Query Match 48.5%; Score 82; DB 1; Length 121;
 Best Local Similarity 57.1%; Pred. No. 0.0002;
 Matches 16; Conservative 3; Mismatches 9; Indels 0; Gaps 0;

QY 3 KMGSGGCGRRKMDRISSSGLGCKVLR 30
 Db 92 KMAHSSCGQKIDRIGAVSRIGCDGLR 119

Search completed: March 29, 2004, 14:43:16
 Job time : 22 secs

GenCore version 5.1.6
Copyright (c) 1993 - 2004 Compugen Ltd.

OM protein - protein search, using sw model

Run on: March 29, 2004, 14:35:24 ; Search time 11 Seconds
(without alignments)
151.477 Million cell updates/sec

Title: US-09-902-517-49
Perfect score: 169
Sequence: 1 SPKMGSGGCGFKMRIRISSSGIGCKVLRH 32

Scoring table: BLOSUM62
Gapop 10.0, Gapext 0.5

Searched: 141681 seqs, 52070155 residues

Total number of hits satisfying chosen parameters: 141681

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%

Listing first 45 summaries

Database: SwissProt_42.*

pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	169	100.0	134	1 ANFB_HUMAN	P16860 homo sapien
2	124	73.4	103	1 ANFB_HUMAN	P13204 bos taurus
3	124	73.4	129	1 ANFB_SHEEP	O66541 ovis aries
4	123	72.8	140	1 ANFB_CANFA	P16859 canis famli
5	122	72.2	131	1 ANFB_PIG	P07634 sus scrofa
6	101	59.8	140	1 ANFB_CHICK	P18908 gallus galli
7	87	51.5	149	1 ANFB_CANFA	P07459 canis famli
8	87	51.5	150	1 ANFB_PIG	P24259 sus scrofa
9	87	51.5	152	1 ANFB_BOVIN	P07501 bos taurus
10	87	51.5	152	1 ANFB_SHEEP	O66540 ovis aries
11	87	51.5	153	1 ANFB_HORSE	P27104 equus cabal
12	87	51.5	153	1 ANFB_HUMAN	P01160 homo sapien
13	83	49.1	153	1 ANFB_RABIT	P07500 corycolagus
14	82	48.5	121	1 ANFB_RAT	P13205 rattus norv
15	82	48.5	152	1 ANFB_MOUSE	P05125 mus musculu
16	82	48.5	152	1 ANFB_MOUSE	P01161 rattus norv
17	81	47.9	128	1 ANFB_CAVPO	P07506 cavia porce
18	79	46.7	126	1 ANFB_BOVIN	P23502 bos taurus
19	79	46.7	126	1 ANFB_HUMAN	P01160 homo sapien
20	79	46.7	126	1 ANFB_MOUSE	O61819 mus musculu
21	79	46.7	126	1 ANFB_PIG	P01164 sus scrofa
22	79	46.7	126	1 ANFB_RAT	P55207 rattus norv
23	79	46.7	126	1 ANFB_SHEEP	P56283 ovis aries
24	78	46.2	39	1 VNOC_OXYMI	P83230 oxyuranus s
25	78	46.2	39	1 VNOC_OXYMI	P83231 oxyuranus s
26	78	46.2	131	1 ANFC_ANGUA	P18145 anguilla ja
27	77	45.6	36	1 ANFB_ANGUA	P22642 anguilla ja
28	77	45.6	121	1 ANFB_MOUSE	P07503 mus musculu
29	76	44.0	118	1 ANFD_RANCA	P40756 rana catesb
30	75	44.4	35	1 VNOC_OXYMI	P83227 oxyuranus m
31	75	44.4	35	1 VNOC_OXYMI	P83228 oxyuranus s
32	75	44.4	35	1 VNOC_OXYMI	P83229 oxyuranus s
33	75	44.4	115	1 ANFC_SCYCA	P23255 scyllorhinu

34	75	44.4	115	1 ANFC_TRISC	P55208 triakis scy
35	74	43.8	27	1 ANFB_ANGUA	P18144 anguilla ja
36	74	43.8	129	1 ANFC_RANCA	P20968 rana catesb
37	73	43.2	35	1 VNOC_OXYMI	P83224 oxyuranus m
38	73	43.2	35	1 VNOC_OXYSA	P83225 oxyuranus s
39	73	43.2	35	1 VNOC_OXYSA	P21805 gallus galli
40	72	42.6	22	1 ANFC_CHICK	P09196 rana ridibu
41	72	42.6	30	1 ANFB_RANCI	P18909 rana catesb
42	72	42.6	145	1 ANFC_RANCA	P11319 equulus aca
43	70	41.4	135	1 ANFC_SQUAC	P28374 dendroaspis
44	69	40.8	38	1 DNP_DENAN	O9pww7 paratichthy
45	53.5	31.7	588	1 COBE_PAROL	

ALIGNMENTS

RESULT 1	ANFB_HUMAN	STANDARD	PRT	134 AA.
AC	P16860:			
DT	01-AUG-1990 (Rel. 15	Created)		
DT	01-AUG-1990 (Rel. 15	Last sequence update)		
DT	15-MAR-2004 (Rel. 43	Last annotation update)		
DE	Brain natriuretic peptide precursor (BNP).			
GN	NPB.			
OS	Homo sapiens (Human).			
OC	Eukaryota; Metazoa; Chordata; Vertebrata; Euteleostomi;			
OC	Mammalia; Eutheria; Primates; Carnivora; Homnidae; Homo.			
OX	NCBI_Taxid=9606;			
RN	(1)			
RX	SEQUENCE FROM N.A.			
RX	MEDLINE=9008474; PubMed=2597152;			
RA	Sudoh T., Maekawa K., Kojima M., Minamoto N., Kangawa K., Matsuo H.;			
RA	Seilhamer J.J., Arfsten A., Miller J.A., Lundquist P.,			
RA	Scarborough R.M., Lewicki J.A., Porter J.G.;			
RT	"Human and canine gene homologs of porcine brain natriuretic			
RT	peptide".			
RL	Biochem. Biophys. Res. Commun. 165:650-658(1989).			
RN	(2)			
RP	SEQUENCE FROM N.A.			
RX	MEDLINE=89193743; PubMed=2522777;			
RA	Sudoh T., Maekawa K., Kojima M., Minamoto N., Kangawa K., Matsuo H.;			
RT	"Cloning and sequence analysis of cDNA encoding a precursor for human			
RT	brain natriuretic peptide".			
RL	Biochem. Biophys. Res. Commun. 159:1427-1434(1989).			
RN	(3)			
RP	SEQUENCE FROM N.A.			
RA	Submitted (MAY-1998) to the EMBL/GenBank/DBJ databases.			
RN	[4]			
RP	SEQUENCE FROM N.A.			
RC	TISSUE=pancreas, and Spleen;			
RX	MEDLINE=22388257; PubMed=12477932;			
RA	Straussberg R.L., Feingold E.A., Grouse L.H., Derge J.G.,			
RA	Klausner R.D., Collins F.S., Wagner L., Sherman C.M., Schuler G.D.,			
RA	Altschuler S.F., Zeeberg B., Buecaw K.H., Schaefer C.F., Bhat N.K.,			
RA	Hopkins R.F., Jordan H., Moore T., Max S.I., Wang J., Hsieh F.,			
RA	Datchenko L., Martusina K., Farmer A.A., Rubin G.M., Hong L.,			
RA	Stapleton M., Soares M.B., Bonaldo M.F., Casavant T.L., Scheetz T.E.,			
RA	Brownstein M.O., Usdin T.B., Toshiyuki S., Carrino P., Prange C.,			
RA	Raha S.S., Loquellano N.A., Peters G.J., Abraham R.D., Mullany S.J.,			
RA	Bosak S.A., McEwan P.J., McKernan K.J., Malek J.A., Gunaratne P.H.,			
RA	Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Huijck S.W.,			
RA	Villalon D.K., Muzny D.M., Sodergren E.J., Lu X., Gibbs R.A.,			
RA	Fahy J., Helton E., Kettelman M., Madan A., Rodriguez S., Sanchez A.,			
RA	Whiting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G.,			
RA	Blakesley R.W., Touchman J.W., Green E.D., Dickson M.C.,			
RA	Rodriguez A.C., Grimwood J., Schmutz J., Wyer R.M.,			
RA	Butterfield V.S.N., Krzywinski M.L., Skalska U., Smalins D.E.,			
RA	Schmitch A., Schein J.E., Jones S.J.M., Marra M.A.;			
RT	"Generation and initial analysis of more than 15,000 full-length			
RT	human and mouse cDNA sequences".			
RL	Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903(2002).			

RN [5]
 RP SEQUENCE OF 27-58 AND 103-134.
 RX MEDLINE=90211249; PubMed=2138890;
 RA Hino J., Tateyama H., Minamoto N., Kangawa K., Matsuo H.,
 RT "Isolation and identification of human brain natriuretic peptides in
 RT cardiac atrium.";
 RL Biochem. Biophys. Res. Commun. 167:693-700(1990).
 RN [6]
 RP SEQUENCE OF 103-134.
 RX MEDLINE=90092577; PubMed=2136732;
 RA Kambayashi Y., Nakao K., Mukoyama M., Saito Y., Ogawa Y., Shiono S.,
 RA Inouye K., Yoshida N., Imura H.,
 RT "Isolation and sequence determination of human brain natriuretic
 RT peptide in human atrium.";
 RL FEBS Lett. 259:341-345(1990).
 CC -1- FUNCTION: Acts as a cardiac hormone with a variety of biological
 CC actions including natriuresis, diuresis, vasorelaxation, and
 CC inhibition of renin and aldosterone secretion. It is thought to
 CC play a key role in cardiovascular homeostasis. Helps restore the
 CC body's salt and water balance. Improves heart function.
 CC -1- SUBCELLULAR LOCATION: Secreted.
 CC -1- TISSUE SPECIFICITY: Brain and also in atria, but at much lower
 CC levels than ANP.
 CC -1- PHARMACEUTICAL: Available under the name Nesiritide (Scios). Used
 CC for the treatment of heart failure.
 CC -1- SIMILARITY: Belongs to the natriuretic peptide family.
 CC -----
 CC This SWISS-PROT entry is copyright. It is produced through a collaboration
 CC between the Swiss Institute of Bioinformatics and the EMBL outstation -
 CC the European Bioinformatics Institute. There are no restrictions on its
 CC use by non-profit institutions as long as its content is in no way
 CC modified and this statement is not removed. Usage by and for commercial
 CC entities requires a license agreement (See <http://www.isb-sib.ch/announce/>
 CC or send an email to license@sib-sib.ch).
 CC -----
 DR EMBL, M31776; AAA35603.1; -;
 DR EMBL, M25296; AAA36355.1; -;
 DR EMBL, AL021155; CA15956.1; -;
 DR EMBL, BC025785; AA425785.1; -;
 DR PIR, A36736; AMHUB.
 DR Genew; HGNC:7940; NPPB.
 DR MIM: 600295; -;
 DR InterPro; IPR002408; Br_natriurecep.
 DR InterPro; IPR000663; Natr_peptide.
 DR Pfam; PF00212; ANP; 1.
 DR PRINTS; PR00710; NATPEPTIDES.
 DR ProDom; PD006651; Br_natriurecep; 1.
 DR SMART; SM00183; NAT_PEP; 1.
 DR PROSITE; PS00263; NATRIURETIC_PEPIDE; 1.
 DR KX Vasocactive; signal; Polymorphism.
 FT SIGNAL 1 26
 FT CHAIN 27 134 GAMMA-BRAIN NATRIURETIC PEPIDE.
 FT PEPTIDE 103 134 BRAIN NATRIURETIC PEPIDE (BNP-32).
 FT DISULFID 112 128 BY SIMILARITY.
 FT VARIANT 25 25 R->L (in dbSNP:52227).
 FT VARIANT 47 47 /FTID=VAR_014580.
 FT VARIANT 47 47 R->H (in dbSNP:52229).
 FT VARIANT 93 93 /FTID=VAR_014581.
 FT VARIANT 93 93 M->L (in dbSNP:52330).
 FT VARIANT 93 93 /FTID=VAR_014582.
 FT SEQUENCE 134 AA; 14726 MW; DC884D9408462146 CRC64;
 SQ
 Query Match 100.0%; Score 169; DB 1; Length 134;
 Best Local Similarity 100.0%; Pred. No. 3,7e-18;
 Matches 32; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

ID ANFB_BOVIN STANDARD; PRT; 103 AA.
 AC P13204;
 DT 01-JAN-1990 (Rel. 13, Created)
 DT 01-DEC-1992 (Rel. 24, Last sequence update)
 DT 15-MAR-2004 (Rel. 43, Last annotation update)
 DE Brain natriuretic peptide precursor (BNP) (Aldosterone secretion
 DE inhibitory factor) (ASIF).
 GN NPPB.
 OS Bos taurus (Bovine).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae;
 OC Bovidae; Bovinae; Bos.
 OX NCBI_TaxID=9913;
 RN [1]
 RP SEQUENCE.
 RX MEDLINE=90114187; PubMed=2532709;
 RA Nguyen T.T., Lazure C., Babinaki K., Chretien M., de Lean A., Ong H.,
 RT "Purification and primary structure of pro-aldosterone secretion
 RT inhibitory factor from bovine adrenal chromaffin cells.";
 RL Mol. Endocrinol. 3:1823-1829(1989).
 RN [2]
 RP SEQUENCE OF 69-103.
 RX MEDLINE=89136947; PubMed=2537187;
 RA Nguyen T.T., Lazure C., Babinaki K., Chretien M., Ong H., de Lean A.,
 RT "Aldosterone secretion inhibitory factor: a novel neuropeptide in
 RT bovine chromaffin cells.";
 RL Endocrinology 124:1591-1593(1989).
 CC -1- FUNCTION: Acts as a cardiac hormone with a variety of biological
 CC actions including natriuresis, diuresis, vasorelaxation, and
 CC inhibition of renin and aldosterone secretion. It is thought to
 CC play a key role in cardiovascular homeostasis. Helps restore the
 CC body's salt and water balance. Improves heart function.
 CC -1- SUBCELLULAR LOCATION: Secreted.
 CC -1- TISSUE SPECIFICITY: Brain and also in atria, but at much lower
 CC levels than ANP.
 CC -1- SIMILARITY: Belongs to the natriuretic peptide family.
 CC -----
 DR PIR, A41403; A41403.
 DR InterPro; IPR002408; Br_natriurecep.
 DR InterPro; IPR000663; Natr_peptide.
 DR Pfam; PF00212; ANP; 1.
 DR PRINTS; PR00710; NATPEPTIDES.
 DR ProDom; PD006651; Br_natriurecep; 1.
 DR SMART; SM00183; NAT_PEP; 1.
 DR PROSITE; PS00263; NATRIURETIC_PEPIDE; 1.
 DR KX Vasocactive.
 FT CHAIN 1 103
 FT PEPTIDE 69 103 GAMMA-BRAIN NATRIURETIC PEPIDE.
 FT PEPTIDE 78 103 ALDOSTERONE SECRETION INHIBITORY FACTOR.
 FT DISULFID 81 97 BRAIN NATRIURETIC PEPIDE (BNP-26).
 FT SEQUENCE 103 AA; 11249 MW; 40209204AF3851D CRC64;
 SQ
 Query Match 73.4%; Score 124; DB 1; Length 103;
 Best Local Similarity 71.0%; Pred. No. 1.5e-11;
 Matches 22; Conservative 5; Mismatches 4; Indels 0; Gaps 0;

RESULT 2
 ANFB_BOVIN

Db 103 SPKMYGSGGCGFRKMDRISSSGIGCKVLRH 134
 103 SPKMYGSGGCGFRKMDRISSSGIGCKVLRH 134
 RESULT 3
 ANFB_SHEEP STANDARD; PRT; 129 AA.
 ID ANFB_SHEEP
 AC Q46511;
 DT 28-FEB-2003 (Rel. 41, Created)
 DT 28-FEB-2003 (Rel. 41, Last sequence update)
 DT 10-OCT-2003 (Rel. 42, Last annotation update)
 DE Brain natriuretic peptide precursor (BNP).
 GN NPPB.
 OS Ovis aries (Sheep).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae;
 OC Bovidae; Caprinae; Ovis.


```

CX NCBI_TaxID=9940;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE=99236261; PubMed=10219521;
RA Atken G.D., Ratzle A.M., Yandle T.G., George P.M., Espiner E.A.,
RA Cameron V.A.;
RT "The characterization of ovine genes for atrial, brain, and C-type
RT natriuretic peptides."
RL Domest. Anim. Endocrinol. 16:115-121(1999).
CC -1- FUNCTION: Acts as a cardiac hormone with a variety of biological
CC actions including natriuresis, diuresis, vasorelaxation, and
CC inhibition of renin and aldosterone secretion. It is thought to
CC play a key role in cardiovascular homeostasis. Helps restore the
CC body's salt and water balance. Improves heart function.
CC -1- SUBCELLULAR LOCATION: Secreted.
CC -1- SIMILARITY: Belongs to the natriuretic peptide family.
CC -----
CC This SWISS-PROT entry is copyright. It is produced through a collaboration
CC between the Swiss Institute of Bioinformatics and the EMBL outstation -
CC the European Bioinformatics Institute. There are no restrictions on its
CC use by non-profit institutions as long as its content is in no way
CC modified and this statement is not removed. Usage by and for commercial
CC entities requires a license agreement (See http://www.isb-sib.ch/announce/
CC or send an email to license@isb-sib.ch).
CC -----
DR EMBL: AF037466; AAB92565.1; -
DR InterPro: IPR002408; Br_natriurecep.
DR InterPro: IPR000663; Natr_peptide.
DR Pfam: PF00212; ANP; 1.
DR PRINTS: PR00710; NATPEPTIDES.
DR ProDom: PD006651; Br_natriurecep; 1.
DR SMART: SM00183; NAT_PEP; 1.
DR PROSITE: PS00263; NATRIURETIC_PEPTIDE; 1.
KM Vasoactive; Signal. 26
FT SIGNAL 1
FT CHAIN 27 129 POTENTIAL.
FT PEPTIDE 101 129 GAMMA-BRAIN NATRIURETIC PEPTIDE.
FT PEPTIDE 101 129 BRAIN NATRIURETIC PEPTIDE 29 (BY
FT SIMILARITY).
FT PEPTIDE 104 129 BRAIN NATRIURETIC PEPTIDE 26 (BY
FT SIMILARITY).
FT DISULFID 107 123 BY SIMILARITY.
FT SEQUENCE 129 AA; 14118 MW; 13D4DF91D32A28FF CRC64;

Query Match 73.4%; Score 124; DB 1; Length 129;
Best Local Similarity 71.0%; Pred. No. 1.9e-11;
Matches 22; Conservative 5; Mismatches 4; Indels 0; Gaps 0;

Cy 2 PKMWQSGGCGFRKMDRISSSGGLGCKYLRRH 32
Db 99 PKMRDSCGFRRLDRIGSLGGLCNVLRKY 129

RESULT 4
ANFB_CANFA STANDARD; PRT; 140 AA.
AC P16859;
DT 01-AUG-1990 (Rel. 15, Created)
DT 01-AUG-1990 (Rel. 15, Last sequence update)
DT 15-MAR-2004 (Rel. 43, Last annotation update)
DE Brain natriuretic peptide precursor (BNP).
GN NPPB.
OS Canis familiaris (Dog).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Carnivora; Fissipedia; Canidae; Canis.
CX NCBI_TaxID=9615;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE=90088474; PubMed=2597152;
RA Seilhamer J.J., Arfsten A., Miller J.A., Lundquist P.,
RA Scarborough R.M., Lewicki J.A., Porter J.G.;
RT "Human and canine gene homologs of porcine brain natriuretic
RT peptide."
RL Biochem. Biophys. Res. Commun. 165:650-658(1989).

```

```

CC -1- FUNCTION: Acts as a cardiac hormone with a variety of biological
CC actions including natriuresis, diuresis, vasorelaxation, and
CC inhibition of renin and aldosterone secretion. It is thought to
CC play a key role in cardiovascular homeostasis. Helps restore the
CC body's salt and water balance. Improves heart function.
CC -1- SUBCELLULAR LOCATION: Secreted.
CC -1- TISSUE SPECIFICITY: Brain and also in atria, but at much lower
CC levels than ANP.
CC -1- SIMILARITY: Belongs to the natriuretic peptide family.
CC -----
CC This SWISS-PROT entry is copyright. It is produced through a collaboration
CC between the Swiss Institute of Bioinformatics and the EMBL outstation -
CC the European Bioinformatics Institute. There are no restrictions on its
CC use by non-profit institutions as long as its content is in no way
CC modified and this statement is not removed. Usage by and for commercial
CC entities requires a license agreement (See http://www.isb-sib.ch/announce/
CC or send an email to license@isb-sib.ch).
CC -----
DR EMBL: M31777; AAA30832.1; -
DR PIR: B36736; B36736.
DR InterPro: IPR002408; Br_natriurecep.
DR InterPro: IPR000663; Natr_peptide.
DR Pfam: PF00212; ANP; 1.
DR PRINTS: PR00710; NATPEPTIDES.
DR ProDom: PD006651; Br_natriurecep; 1.
DR SMART: SM00183; NAT_PEP; 1.
DR PROSITE: PS00263; NATRIURETIC_PEPTIDE; 1.
KM Vasoactive; Signal. 26
FT SIGNAL 1
FT CHAIN 27 140 POTENTIAL.
FT PEPTIDE 107 140 GAMMA-BRAIN NATRIURETIC PEPTIDE.
FT PEPTIDE 112 140 BRAIN NATRIURETIC PEPTIDE (BNP-34).
FT DISULFID 118 134 BY SIMILARITY.
FT SEQUENCE 140 AA; 14966 MW; 6128B6F4D0FD49D9 CRC64;

Query Match 72.8%; Score 123; DB 1; Length 140;
Best Local Similarity 68.8%; Pred. No. 2.8e-11;
Matches 22; Conservative 5; Mismatches 5; Indels 0; Gaps 0;

Cy 1 SPKMWQSGGCGFRKMDRISSSGGLGCKYLRRH 32
Db 109 SPKMHKSGCGFRRLDRIGSLGGLCNVLRKY 140

RESULT 5
ANFB_PIG STANDARD; PRT; 131 AA.
AC P07634;
DT 01-APR-1988 (Rel. 07, Created)
DT 01-MAR-1989 (Rel. 10, Last sequence update)
DT 15-MAR-2004 (Rel. 43, Last annotation update)
DE Brain natriuretic peptide precursor (BNP).
GN NPPB.
OS Sus scrofa (Pig).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Cetartiodactyla; Suidae; Suidae; Sus.
CX NCBI_TaxID=9623;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE=89061744; PubMed=1396348;
RA Maekawa K., Sudoh T., Furusawa M., Minamino N., Kangawa K., Okubo H.,
RA Nakatsuki S., Matsuo H.;
RT "Cloning and sequence analysis of cDNA encoding a precursor for
RT porcine brain natriuretic peptide."
RL Biochem. Biophys. Res. Commun. 157:410-416(1988).
RN [2]
RP SEQUENCE FROM N.A.
RX MEDLINE=89214071; PubMed=2708334;
RA Porter J.G., Arfsten A., Paliet T., Scarborough R.M.,
RA Lewicki J.A., Seilhamer J.J.;
RT "Cloning of a cDNA encoding porcine brain natriuretic peptide."
RL J. Biol. Chem. 264:6689-6692(1989).
RN [3]

```

RP SEQUENCE OF 26-131.
 RX MEDLINE=89061743; PubMed=1196347;
 RA Minamino N., Kangawa K., Matsuo H.;
 RT "Isolation and identification of a high molecular weight brain
 RT natriuretic peptide in porcine cardiac atrium";
 RL Biochem. Biophys. Res. Commun. 157:402-409(1988).
 RN [4]
 RP SEQUENCE OF 100-131.
 RX MEDLINE=88339957; PubMed=3421965;
 RA Sudoh T., Minamino N., Kangawa K., Matsuo H.;
 RT "Brain natriuretic peptide-32: N-terminal six amino acid extended
 RT form of brain natriuretic peptide identified in porcine brain";
 RL Biochem. Biophys. Res. Commun. 155:726-732(1988).
 RN [5]
 RP SEQUENCE OF 106-131.
 RX MEDLINE=88156915; PubMed=2964562;
 RA Sudoh T., Kangawa K., Minamino N., Matsuo H.;
 RT "A new natriuretic peptide in porcine brain";
 RL Nature 332:78-81(1988).
 RN [6]
 RP STRUCTURE BY NMR OF BNP-26.
 RX MEDLINE=91031435; PubMed=2146114;
 RA Inoka H., Kikuchi T., Endo S., Ishibashi Y., Wakimasu M., Mizuta E.;
 RT "Conformation in solution of porcine brain natriuretic peptide
 RT determined by combined use of nuclear magnetic resonance and distance
 RT geometry";
 RL Eur. J. Biochem. 193:127-134(1990).
 RN [7]
 RP STRUCTURE BY NMR OF BNP-26.
 RX MEDLINE=92007873; PubMed=1915362;
 RA Craik D., Munro S., Nielsen K., Sheehan P., Tregear G., Wade J.;
 RT "The conformation of porcine-brain natriuretic peptide by two-
 RT dimensional NMR spectroscopy";
 RL Eur. J. Biochem. 201:183-191(1991).
 CC -1- FUNCTION: Acts as a cardiac hormone with a variety of biological
 CC actions including natriuresis, diuresis, vasorelaxation, and
 CC inhibition of renin and aldosterone secretion. It is thought to
 CC play a key role in cardiovascular homeostasis. Helps restore the
 CC body's salt and water balance. Improves heart function.
 CC -1- SUBCELLULAR LOCATION: Secreted.
 CC -1- TISSUE SPECIFICITY: Brain and also in atria, but at much lower
 CC levels than ANP.
 CC -1- SIMILARITY: Belongs to the natriuretic peptide family.
 CC -----
 CC This SWISS-PROT entry is copyright. It is produced through a collaboration
 CC between the Swiss Institute of Bioinformatics and the EMBL outstation -
 CC the European Bioinformatics Institute. There are no restrictions on its
 CC use by non-profit institutions as long as its content is in no way
 CC modified and this statement is not removed. Usage by and for commercial
 CC entities requires a license agreement (see <http://www.isb-sib.ch/announce/>
 CC or send an email to license@isb-sib.ch).
 CC -----
 CC EMBL, M23596; AAB59258.1; -;
 CC EMBL, M25547; AAA31007.1; -;
 CC PIR, A31676; A31676.
 CC PIR, A33873; A33873.
 CC InterPro, IPR002408; Br_natriurecep.
 CC InterPro, IPR000663; Natri_peptide.
 CC Pfam, PF00212; ANP.1.
 CC PRINTS; PR00710; NATPEPTIDES.
 CC ProDom; PD006651; Br_natriurecep; 1.
 CC SMART; SM00183; NAT_PEP.1.
 CC PROSITE; PS00263; NATRIURETIC_PEPTIDE.1.
 KW Vasoactive; Signal.
 FT SIGNAL 1 25
 FT CHAIN 26 131 GAMMA-BRAIN NATRIURETIC PEPTIDE.
 FT PEPTIDE 100 131 BRAIN NATRIURETIC PEPTIDE (BNP-32).
 FT PEPTIDE 106 131 BRAIN NATRIURETIC PEPTIDE (BNP-26).
 FT DISULFID 109 125
 FT VARIANT 26 125 H -> Y (IN A CLONE).
 SQ SEQUENCE 131 AA; 14512 MW; CCAFE6BE4A50C18A CRC64;

Best Local Similarity 68.8%; Pred. No. 3,7e-11;
 Matches 22; Conservative 5; Mismatches 5; Indels 0; Gaps 0;
 QY 1 SPKRWQSGCGFRKMDRISSSGGCKYLRRH 32
 DB 100 SPKRWDSGCGFRKLDRISSSGGCKYLRRY 131
 RESULT 6
 ANP_CHICK
 ID ANP_CHICK STANDARD; PRT; 140 AA.
 AC P18088
 DT 01-NOV-1990 (Rel. 16, Created)
 DT 01-APR-1992 (Rel. 21, Last sequence update)
 DT 10-OCT-2003 (Rel. 42, Last annotation update)
 DE Atrial natriuretic factor precursor (ANP) [Atrial natriuretic peptide]
 DE (ANP) (Preproatriodin).
 GN NPFA.
 OS Gallus gallus (Chicken).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Archosauria; Aves; Neognathae; Galliformes; Phasianidae; Phasianinae;
 OC Gallus.
 OX NCBI_TaxID=9031;
 RN [1]
 RP SEQUENCE FROM N.A.
 RX MEDLINE=91192169; PubMed=1826483;
 RA Akizuki N., Kangawa K., Minamino N., Matsuo H.;
 RT "Cloning and sequence analysis of complementary DNA encoding a
 RT precursor for chicken natriuretic peptide";
 RL FEBS Lett. 280:357-362(1991).
 RN [2]
 RP SEQUENCE OF 112-140.
 RC TISSUE=Heart;
 RX MEDLINE=89025605; PubMed=2972278;
 RA Miyata A., Minamino N., Kangawa K., Matsuo H.;
 RT "Identification of a 29-amino acid natriuretic peptide in chicken
 RT heart";
 RL Biochem. Biophys. Res. Commun. 155:1330-1337(1988).
 CC -1- FUNCTION: Atrial natriuretic factor (ANP) is a potent vasoactive
 CC substance synthesized in mammalian atria and is thought to play a
 CC key role in cardiovascular homeostasis. Has a cGMP-stimulating
 CC activity.
 CC -1- SUBCELLULAR LOCATION: Secreted.
 CC -1- MISCELLANEOUS: A disulfide bond is required for full activity of
 CC atriopeptins.
 CC -1- SIMILARITY: Belongs to the natriuretic peptide family.
 CC -----
 CC This SWISS-PROT entry is copyright. It is produced through a collaboration
 CC between the Swiss Institute of Bioinformatics and the EMBL outstation -
 CC the European Bioinformatics Institute. There are no restrictions on its
 CC use by non-profit institutions as long as its content is in no way
 CC modified and this statement is not removed. Usage by and for commercial
 CC entities requires a license agreement (see <http://www.isb-sib.ch/announce/>
 CC or send an email to license@isb-sib.ch).
 CC -----
 CC EMBL, X57702; CAA40879.1; -;
 CC PIR, S14320; S14320.
 CC InterPro, IPR002408; Br_natriurecep.
 CC InterPro, IPR000663; Natri_peptide.
 CC Pfam, PF00212; ANP.1.
 CC PRINTS; PR00710; NATPEPTIDES.
 CC ProDom; PD006651; Br_natriurecep; 1.
 CC SMART; SM00183; NAT_PEP.1.
 CC PROSITE; PS00263; NATRIURETIC_PEPTIDE.1.
 KW Vasoactive; Signal.
 FT SIGNAL 1 24
 FT CHAIN 25 110 POTENTIAL.
 FT PEPTIDE 112 140 ATRIAL NATRIURETIC FACTOR.
 FT DISULFID 118 134
 SQ SEQUENCE 140 AA; 15714 MW; 67FEEF094E71F40 CRC64;

Query Match 59.8%; Score 101; DB 1; Length 140;
 Best Local Similarity 54.8%; Pred. No. 5.5e-08;

Matches 17; Conservative 8; Mismatches 6; Indels 0; Gaps 0;

Qy 2 PKMWQSGCGFRKMDRISSSSGLCCKVLRH 32
 Db 110 PRMRDSCGFRIDRIGSLSGMCGNSRKN 140

RESULT 7
 ANF_CANFA STANDARD; PRT; 149 AA.

AC P07499;
 DT 01-APR-1988 (Rel. 07, Created)
 DT 01-APR-1988 (Rel. 07, Last annotation update)
 DT 10-OCT-2003 (Rel. 42, Last annotation update)
 DE Atrial natriuretic factor precursor (ANF) (Atrial natriuretic peptide)
 DE (ANP) (Prepronatriodilatin).
 GN NPPA.
 OS Canis familiaris (Dog).
 OC Eukaryota; Metazoa; Chordata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Carnivora; Fissipedia; Canidae; Canis.
 CX NCBI_TaxID=9615;
 RN [1]
 RP SEQUENCE FROM N.A.
 RX MEDLINE=86076957; PubMed=2934062;
 RA Oikawa S., Inai M., Inuzuka C., Tawaragi Y., Nakazato H., Matsuo H.;
 RT "Structure of dog and rabbit precursors of atrial natriuretic
 RT polypeptides deduced from nucleotide sequence of cloned cDNA.";
 RL Biochem. Biophys. Res. Commun. 132:892-899(1985).
 CC -1- FUNCTION: Atrial natriuretic factor (ANF) is a potent vasoactive
 CC substance synthesized in mammalian atria and is thought to play a
 CC key role in cardiovascular homeostasis. Has a cGMP-stimulating
 CC activity.
 CC -1- SUBCELLULAR LOCATION: Secreted.
 CC -1- MISCELLANEOUS: A disulfide bond is required for full activity of
 CC atriopeptin.
 CC -1- SIMILARITY: Belongs to the natriuretic peptide family.

CC -----
 CC This SWISS-PROT entry is copyright. It is produced through a collaboration
 CC between the Swiss Institute of Bioinformatics and the EMBL outstation -
 CC the European Bioinformatics Institute. There are no restrictions on its
 CC use by non-profit institutions as long as its content is in no way
 CC modified and this statement is not removed. Usage by and for commercial
 CC entities requires a license agreement (See <http://www.isb-sib.ch/announce/>
 CC or send an email to license@isb-sib.ch).
 CC -----

CC EMBL; M12045; AAA30828.1; -
 DR PIR; A25302; AWG.
 DR InterPro; IPR000663; Natri_peptide.
 DR Pfam; PF00212; ANP; 1.
 DR PRINTS; PR00710; Natripeptides.
 DR SMART; SM00183; NAT_PEP; 1.
 DR PROSITE; PS00263; NATRIURETIC_PEPTIDE; 1.
 KW Vasoactive; Signal.
 FT SIGNAL 1 23 POTENTIAL.
 FT PROPEP 24 120
 FT PEPTIDE 122 149 ATRIAL NATRIURETIC FACTOR.
 FT DISULFID 128 144
 SQ SEQUENCE 149 AA; 15819 MW; 9BA3A11C0B757DE CRC64;

Query Match 51.5%; Score 87; DB 1; Length 149;
 Best Local Similarity 50.0%; Pred. No. 7.2e-06;
 Matches 15; Conservative 6; Mismatches 9; Indels 0; Gaps 0;

Qy 1 SPKMVQSGCGFRKMDRISSSSGLCCKVLR 30
 Db 119 APRSRSSCGFRMDRIGAOSGLGNSFR 148

RESULT 8
 ANF_PIG STANDARD; PRT; 150 AA.
 ID ANF_PIG
 AC P24259;
 DT 01-MAR-1992 (Rel. 21, Created)

DT 01-MAR-1992 (Rel. 21, Last sequence update)
 DT 10-OCT-2003 (Rel. 42, Last annotation update)
 DE Atrial natriuretic factor precursor (ANF) (Atrial natriuretic peptide)
 DE (ANP) (Prepronatriodilatin) [Contains: Cardiodilatin-related peptide
 DE (CDP)].
 GN NPPA.
 OS Sus scrofa (Pig).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Cetartiodactyla; Suidae; Sus.
 CX NCBI_TaxID=9823;
 RN [1]
 RP SEQUENCE FROM N.A.
 RC TISSUE=Heart right atrium;
 RX MEDLINE=91067478; PubMed=2147477;
 RA Maegret H.V., Appelans H., Gassen H.G., Forssmann W.-G.;
 RT "Nucleotide sequence of a porcine prepro atrial natriuretic peptide
 RT (ANP) cDNA.";
 RL Nucleic Acids Res. 18:6704-6704(1990).
 RN [2]
 RP SEQUENCE OF 25-150.
 RC TISSUE=Heart right atrium;
 RX MEDLINE=85124561; PubMed=6549270;
 RA Forssmann W.-G., Bitt C., Carlgust M., Christman M., Finke R.,
 RA Henschen A., Hock D., Kirchheim H., Kreye V., Lottspeich F., Metz J.,
 RA Mult V., Reinecke M.;
 RT "The auricular myocardiocytes of the heart constitute an endocrine
 RT organ. Characterization of a porcine cardiac peptide hormone,
 RT cardiodilatin-126.";
 RL Cell Tissue Res. 238:425-430(1984).
 CC -1- FUNCTION: Atrial natriuretic factor (ANF) is a potent vasoactive
 CC substance synthesized in mammalian atria and is thought to play a
 CC key role in cardiovascular homeostasis. Has a cGMP-stimulating
 CC activity.
 CC -1- SUBCELLULAR LOCATION: Secreted.
 CC -1- MISCELLANEOUS: A disulfide bond is required for full activity of
 CC atriopeptin.
 CC -1- SIMILARITY: Belongs to the natriuretic peptide family.

CC -----
 CC This SWISS-PROT entry is copyright. It is produced through a collaboration
 CC between the Swiss Institute of Bioinformatics and the EMBL outstation -
 CC the European Bioinformatics Institute. There are no restrictions on its
 CC use by non-profit institutions as long as its content is in no way
 CC modified and this statement is not removed. Usage by and for commercial
 CC entities requires a license agreement (See <http://www.isb-sib.ch/announce/>
 CC or send an email to license@isb-sib.ch).
 CC -----

CC EMBL; X54669; CAA8480.1; -
 DR PIR; S13107; S13107.
 DR InterPro; IPR000663; Natri_peptide.
 DR Pfam; PF00212; ANP; 1.
 DR PRINTS; PR00710; Natripeptides.
 DR SMART; SM00183; NAT_PEP; 1.
 DR PROSITE; PS00263; NATRIURETIC_PEPTIDE; 1.
 KW Vasoactive; Signal.
 FT SIGNAL 1 24
 FT PEPTIDE 25 54 CARDIODILATIN-RELATED PEPTIDE (CDP)
 FT PROPEP 55 121 (BY SIMILARITY).
 FT PEPTIDE 123 150 ATRIAL NATRIURETIC FACTOR.
 FT DISULFID 129 145 BY SIMILARITY.
 SQ SEQUENCE 150 AA; 16351 MW; 16CFE4FA0BC063 CRC64;

Query Match 51.5%; Score 87; DB 1; Length 150;
 Best Local Similarity 50.0%; Pred. No. 7.3e-06;
 Matches 15; Conservative 6; Mismatches 9; Indels 0; Gaps 0;

Qy 1 SPKMVQSGCGFRKMDRISSSSGLCCKVLR 30
 Db 120 APRSRSSCGFRMDRIGAOSGLGNSFR 149

RESULT 9
 ANF_BOVIN

```

ID ANF_BOVIN STANDARD; PRT; 152 AA.
AC P07501;
DT 01-APR-1998 (Rel. 07, Created)
DT 01-MAR-1999 (Rel. 10, Last sequence update)
DT 10-OCT-2003 (Rel. 42, Last annotation update)
DE Atrial natriuretic factor precursor (ANF) (Atrial natriuretic peptide)
DE (ANF) (Preproatriodilatin).
GN NPFA.
OS Bos taurus (Bovine).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae;
OC Bovidae; Bovinae; Bos.
OX NCBI_TaxID=9913;
RN [1]
RP SEQUENCE FROM N.A. PubMed=2939830;
RX MEDLINE=86215205; Pubmed=2939830;
RA Vlasuk G.P., Miller J., Bencen G.H., Lewicki J.A.;
RT "Structure and analysis of the bovine atrial natriuretic peptide
RT precursor gene."
RL Biochem. Biophys. Res. Commun. 136:396-403(1986).
RN [2]
RP SEQUENCE OF 123-150.
RX MEDLINE=86173941; Pubmed=3007908;
RA Ong H., McNicol N., Lazure C., Seidah N., Chretien M., Cantin M.,
RA de Lean A.;
RT "Purification and sequence determination of bovine atrial natriuretic
RT factor."
RL Life Sci. 38:1309-1315(1986).
CC -1- FUNCTION: Atrial natriuretic factor (ANF) is a potent vasoactive
CC substance synthesized in mammalian atria and is thought to play a
CC key role in cardiovascular homeostasis. Has a cGMP-stimulating
CC activity.
CC -1- MISCELLANEOUS: A disulfide bond is required for full activity of
CC atriopeptins.
CC -1- SIMILARITY: Belongs to the natriuretic peptide family.
CC
CC This SWISS-PROT entry is copyright. It is produced through a collaboration
CC between the Swiss Institute of Bioinformatics and the EMBL Outstation -
CC the European Bioinformatics Institute. There are no restrictions on its
CC use by non-profit institutions as long as its content is in no way
CC modified and this statement is not removed. Usage by and for commercial
CC entities requires a license agreement (See http://www.isb-sib.ch/announce/
CC or send an email to license@sib-sib.ch).
CC -----
CC EMBL; M13145; AAA0375.1; -.
CC DR EMBL; M13145; AAA0375.1; -.
CC DR PIR; A90124; AMBO.
CC DR InterPro; IPR002407; At_natriurecep.
CC DR InterPro; IPR002408; Br_natriurecep.
CC DR InterPro; IPR000663; Natr_peptide.
CC DR Pfam; PF00212; ANP; 1.
CC DR PRINTS; PR00710; NATPEPTIDES.
CC DR ProDom; PD005107; At_natriurecep; 1.
CC DR ProDom; PD006651; Br_natriurecep; 2.
CC DR SMART; SM00183; NAT_PEP; 1.
CC DR PROSITE; PS00263; NATRIURETIC_PEPTIDE; 1.
CC KM Vasoactive; Signal.
CC FT SIGNAL 1 24 POTENTIAL.
CC FT PROPEP 25 121 ATRIAL NATRIURETIC FACTOR.
CC FT PEPTIDE 123 150
CC FT DISULFID 129 145
CC SQ SEQUENCE 152 AA; 16518 MW; 48D040FAE01DFD15 CRC64;

Query Match 51.5%; Score 87; DB 1; Length 152;
Best Local Similarity 50.0%; Pred. No. 7.4e-06;
Matches 15; Conservative 6; Mismatches 9; Indels 0; Gaps 0;

QY 1 SPKMYGSGCFGRKMDRISSSGGLGCKVLR 30
DB 120 APRSLRRSCFGGRMDRIGAGSGLGCSNFR 149

```

```

ANF_SHEEP STANDARD; PRT; 152 AA.
ID ANF_SHEEP
AC P07501;
DT 28-FEB-2003 (Rel. 41, Created)
DT 28-FEB-2003 (Rel. 41, Last sequence update)
DT 10-OCT-2003 (Rel. 42, Last annotation update)
DE Atrial natriuretic factor precursor (ANF) (Atrial natriuretic peptide)
DE (ANF) (Preproatriodilatin).
GN NPFA.
OS Ovis aries (Sheep).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae;
OC Bovidae; Caprinae; Ovis.
OX NCBI_TaxID=9940;
RN [1]
RP SEQUENCE FROM N.A. PubMed=10219521;
RX MEDLINE=99236261; Pubmed=10219521;
RA Aitken G.D., Ralvis A.M., Yandle T.G., George P.M., Espiner E.A.,
RA Cameron V.A.;
RT "The characterization of ovine genes for atrial, brain, and C-type
RT natriuretic peptides."
RL Domest. Anim. Endocrinol. 16:115-121(1999).
CC -1- FUNCTION: Atrial natriuretic factor (ANF) is a potent vasoactive
CC substance synthesized in mammalian atria and is thought to play a
CC key role in cardiovascular homeostasis. Has a cGMP-stimulating
CC activity.
CC -1- SUBCELLULAR LOCATION: Secreted.
CC -1- MISCELLANEOUS: A disulfide bond is required for full activity of
CC atriopeptins.
CC -1- SIMILARITY: Belongs to the natriuretic peptide family.
CC
CC This SWISS-PROT entry is copyright. It is produced through a collaboration
CC between the Swiss Institute of Bioinformatics and the EMBL Outstation -
CC the European Bioinformatics Institute. There are no restrictions on its
CC use by non-profit institutions as long as its content is in no way
CC modified and this statement is not removed. Usage by and for commercial
CC entities requires a license agreement (See http://www.isb-sib.ch/announce/
CC or send an email to license@sib-sib.ch).
CC -----
CC EMBL; AF037465; AAB92564.1; -.
CC DR EMBL; AF037465; AAB92564.1; -.
CC DR InterPro; IPR002407; At_natriurecep.
CC DR InterPro; IPR002408; Br_natriurecep.
CC DR InterPro; IPR000663; Natr_peptide.
CC DR Pfam; PF00212; ANP; 1.
CC DR PRINTS; PR00710; NATPEPTIDES.
CC DR ProDom; PD005107; At_natriurecep; 1.
CC DR ProDom; PD006651; Br_natriurecep; 2.
CC DR SMART; SM00183; NAT_PEP; 1.
CC DR PROSITE; PS00263; NATRIURETIC_PEPTIDE; 1.
CC KM Vasoactive; Signal.
CC FT SIGNAL 1 24 POTENTIAL.
CC FT PROPEP 25 121 BY SIMILARITY.
CC FT PEPTIDE 123 150 ATRIAL NATRIURETIC FACTOR.
CC FT DISULFID 129 145 BY SIMILARITY.
CC SQ SEQUENCE 152 AA; 16368 MW; 5FA82C6E1325E7C6 CRC64;

Query Match 51.5%; Score 87; DB 1; Length 152;
Best Local Similarity 50.0%; Pred. No. 7.4e-06;
Matches 15; Conservative 6; Mismatches 9; Indels 0; Gaps 0;

QY 1 SPKMYGSGCFGRKMDRISSSGGLGCKVLR 30
DB 120 APRSLRRSCFGGRMDRIGAGSGLGCSNFR 149

RESULT 11
ID ANF_HORSE STANDARD; PRT; 153 AA.
AC P27104;
DT 01-AUG-1992 (Rel. 23, Created)
DT 01-AUG-1992 (Rel. 23, Last sequence update)
DT 10-OCT-2003 (Rel. 42, Last annotation update)
DE Atrial natriuretic factor precursor (ANF) (Atrial natriuretic peptide)

```

DE (ANP) [Prepronatriotidin].
 GN NPPA.
 OS Equus caballus (Horse).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Perissodactyla; Equidae; Equus.
 NX NCBI_TaxID=9796;
 RN [1]
 RP SEQUENCE FROM N.A.
 RC STRAIN=Adamiaticus; TISSUE=Heart atrium;
 RA Maegert H.J., Richter R., Schmeiding G., Foesmann W.-G.;
 RL Submitted (MAR-1991) to the EMBL/GenBank/DBJ databases.
 CC -1- FUNCTION: Atrial natriuretic factor (ANF) is a potent vasoactive
 CC substance synthesized in mammalian atria and is thought to play a
 CC key role in cardiovascular homeostasis. Has a GMP-stimulating
 CC activity.
 CC -1- SUBCELLULAR LOCATION: Secreted.
 CC -1- MISCELLANEOUS: A disulfide bond is required for full activity of
 CC atriopeptins.
 CC -1- SIMILARITY: Belongs to the natriuretic peptide family.
 CC
 CC This SWISS-PROT entry is copyright. It is produced through a collaboration
 CC between the Swiss Institute of Bioinformatics and the EMBL outstation-
 CC the European Bioinformatics Institute. There are no restrictions on its
 CC use by non-profit institutions as long as its content is in no way
 CC modified and this statement is not removed. Usage by and for commercial
 CC entities requires a license agreement (See <http://www.isb-sib.ch/announce/>
 CC or send an email to license@isb-sib.ch).
 CC
 DR EMBL: X58563; CAA41443.1; -.
 DR PIR: S14873; S14873.
 DR InterPro: IPR000663; Natr_peptide.
 DR Pfam: PF00212; ANP; 1.
 DR PRINTS: PR00710; NATPEPTIDES.
 DR SMART: SM00183; NAT_PEP; 1.
 DR PROSITE: PS00263; NATRIURETIC_PEPTIDE; 1.
 KM Vasoactive; Signal.
 FT SIGNAL 25 POTENTIAL.
 FT PROPEP 26 122
 FT PEPTIDE 124 151 ATRIAL NATRIURETIC FACTOR.
 FT DISULFID 130 146 BY SIMILARITY.
 SQ SEQUENCE 153 AA; 16825 MW; AFCL9471DF564BD7 CRC64;
 Query Match 51.5%; Score 87; DB 1; Length 153;
 Best Local Similarity 50.0%; Pred. No. 7,4e-06;
 Matches 15; Conservative 6; Mismatches 9; Indels 0; Gaps 0;
 Qy 1 SPMVGGSGCFGRMDRISSSGGCKVLR 30
 Db 121 APRRLRSSCFGRMDRISSSGGCKVLR 150
 RESULT 12
 ANP_HUMAN STANDARD; PRT; 153 AA.
 ID_1-ANP_HUMAN
 AC P01160; O13766; Rel. 01; Created
 DT 21-JUN-1986 (Rel. 05, Last sequence update)
 DT 13-AUG-1987 (Rel. 43, Last annotation update)
 DT 15-MAR-2004 (Rel. 43, Last annotation update)
 DE Atrial natriuretic factor precursor (ANP) (Atrial natriuretic peptide)
 DE (ANP) (Prepronatriotidin) [Contains: Cardiotocin-related peptide
 DE (CRP)].
 GN NPPA OR PND.
 OS Homo sapiens (Human).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Primates; Catarrhini; Hominiidae; Homo.
 CX NCBI_TaxID=9606;
 RN [1]
 RP SEQUENCE OF 1-151 FROM N.A.
 RP MEDLINE=84219799; PubMed=6203042;
 RX Oikawa S., Inai M., Ueno A., Tanaka S., Noguchi T., Nakazato H.,
 RA Kangawa K., Fukuda A., Matsuo H.;
 RT "Cloning and sequence analysis of cDNA encoding a precursor for human
 RT atrial natriuretic polypeptide.";

RL Nature 309:724-726(1984).
 RN [2]
 RP SEQUENCE OF 1-151 FROM N.A.
 RX MEDLINE=84295577; PubMed=6547996;
 RA Nakayama K., Ohkubo H., Hirose T., Inayama S., Nakanishi S.;
 RT "mRNA sequence for human cardiotocin-atrial natriuretic factor
 RT precursor and regulation of precursor mRNA in rat atria.";
 RL Nature 310:699-701(1984).
 RN [3]
 RP SEQUENCE OF 1-151 FROM N.A.
 RX MEDLINE=85061626; PubMed=6095118;
 RA Nemer M., Chamberland M., Strole D., Argentin S., Drouin J.,
 RA Dixon R.A.F., Zivin R.A., Condra J.H.;
 RT "Gene structure of human cardiac hormone precursor,
 RT prenatocin.";
 RL Nature 312:654-656(1984).
 RN [4]
 RP SEQUENCE OF 1-151 FROM N.A.
 RX MEDLINE=85061627; PubMed=6095119;
 RA Greenberg B.D., Bencen G.H., Sellhammer J.J., Lewicki J.A.,
 RA Pridges J.C.;
 RT "Nucleotide sequence of the gene encoding human atrial natriuretic
 RT factor precursor.";
 RL Nature 312:656-658(1984).
 RN [5]
 RP SEQUENCE OF 1-151 FROM N.A.
 RX MEDLINE=85065766; PubMed=6542248;
 RA Seidman C.E., Bloch K.D., Klein K.A., Smith J.A., Seidman J.G.;
 RT "Nucleotide sequences of the human and mouse atrial natriuretic
 RT factor genes.";
 RL Science 226:1206-1209(1984).
 RN [6]
 RP SEQUENCE OF 1-151 FROM N.A.
 RX MEDLINE=85206210; PubMed=3156606;
 RA Seidman C.E., Bloch K.D., Zisfein J., Smit J., Haber E., Homcy C.,
 RA Duly A.D., Choi E., Graham R.M., Seidman J.G.,
 RT "Molecular studies of the atrial natriuretic factor gene.";
 RL Hypertension 7:131-134(1985).
 RN [7]
 RP SEQUENCE OF 1-151 FROM N.A.
 RA Brington H.;
 RT Submitted (MAY-1998) to the EMBL/GenBank/DBJ databases.
 RN [8]
 RP SEQUENCE FROM N.A.
 RC TISSUE=Prostate;
 RX MEDLINE=22388257; PubMed=12477932;
 RA Strausberg R.L., Feingold E.A., Grouse L.H., Derge J.G.,
 RA Klausner R.D., Collins F.S., Wagner K.H., Scheffer C.F., Bhat N.K.,
 RA Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,
 RA Hopkins R.F., Jordan H., Moore T., Max S.I., Wang J., Heile F.,
 RA Diatchenko L., Marzina K., Farmer A.A., Rubin G.M., Hong L.,
 RA Stadelton M., Soares M.B., Bonaldo M.F., Casavant T.L., Scheetz T.E.,
 RA Brownstein M.J., Uceda T.B., Toshiyuki S., Carninci P., Prange C.,
 RA Raha S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mullany S.J.,
 RA Bosak S.A., McEwan P.J., McKernan K.J., Malek J.A., Gunaratne P.H.,
 RA Richards S., Morley K.C., Hale S., Garcia A.M., Gay L.J., Hulky S.W.,
 RA Villalón D.K., Muzny D.M., Sodergren E.J., Lu X., Gibbs R.,
 RA Rahy J., Helton E., Ketterman M., Madan A., Rodriguez S., Sanchez A.,
 RA Whiting M., Madan A., Young A.C., Shevchenko I., Bouffard G.G.,
 RA Blakesley R.W., Touchman J.W., Green E.D., Dickson M.C.,
 RA Rodriguez A.C., Grimwood J., Schmutz J., Myers R.M.,
 RA Butterfield Y.S.N., Krzyzinski M.I., Skalska U., Small D.E.,
 RA Scherch A., Schein J.E., Jones S.J.M., Marra M.A.;
 RT "Generation and initial analysis of more than 15,000 full-length
 RT human and mouse cDNA sequences.";
 RL Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903(2002).
 RN [9]
 RP SEQUENCE OF 118-153 FROM N.A.
 RX MEDLINE=85038509; PubMed=6238331;
 RA Zivin R.A., Condra J.H., Dixon R.A.F., Seidman N.G., Chretien M.,
 RA Nemer M., Chamberland M., Drouin J.;
 RT "Molecular cloning and characterization of DNA sequences encoding rat
 RT and human atrial natriuretic factors.";

RL Proc. Natl. Acad. Sci. U.S.A. 81:6325-6329(1984).
 RN [10]
 RP SEQUENCE OF 1-75 FROM N.A.
 RX MEDLINE=85096983; PubMed=6097248;
 RA Maki M., Parentier M., Inagami T.;
 RT "Cloning of genomic DNA for human atrial natriuretic factor.";
 RL Biochem. Biophys. Res. Commun. 125:797-802(1984).
 RN [11]
 RP SEQUENCE OF 124-151.
 RX MEDLINE=84128019; PubMed=6230082;
 RA Kangawa K., Matsuo H.;
 RT "Purification and complete amino acid sequence of alpha-human atrial
 natriuretic polypeptide (alpha-hANP).";
 RL Biochem. Biophys. Res. Commun. 118:131-139(1984).
 RN [12]
 RP STRUCTURE BY NMR OF 124-151 MUTANT SELECTIVE FOR NPR-C RECEPTOR.
 RX MEDLINE=94318633; PubMed=8043577; Cunningham B.C.;
 RA Faltzrother M.U., McDowell R.S., Cunningham B.C.;
 RT "Solution conformation of an atrial natriuretic peptide variant
 selective for the type A receptor.";
 RL Biochemistry 33:8897-8904(1994).
 CC -1- FUNCTION: Atrial natriuretic factor (ANF) is a potent vasodilator
 substance synthesized in mammalian atria and is thought to play a
 key role in cardiovascular homeostasis. Has a cGMP-stimulating
 activity.
 CC -1- SUBCELLULAR LOCATION: Secreted.
 CC -1- POLYMORPHISM: There are two different prepronatriuretin alleles.
 CC One codes for 2 Arg residues at the C-terminus that are cleaved to
 form the mature peptide, while the other ends in a termination
 codon immediately after the last codon of the mature peptide.
 CC -1- SIMILARITY: Belongs to the natriuretic peptide family.
 CC -----
 CC This SWISS-PROT entry is copyright. It is produced through a collaboration
 between the Swiss Institute of Bioinformatics and the EMBL outstation -
 the European Bioinformatics Institute. There are no restrictions on its
 use by non-profit institutions as long as its content is in no way
 modified and this statement is not removed. Usage by and for commercial
 entities requires a license agreement (See <http://www.isb-sib.ch/announce/>
 or send an email to license@isb-sib.ch).
 CC -----
 CC EMBL; X01470; CA25699.1; JOINED.
 CC EMBL; X02558; CA25699.1; JOINED.
 CC EMBL; X02043; AA859379.1; -.
 CC EMBL; X01471; CA25700.1; ALT_SEQ.
 CC EMBL; K02044; AA51730.1; -.
 CC EMBL; AL021155; CA15955.1; -.
 CC EMBL; BC006893; AA05893.1; -.
 CC EMBL; M30262; AA35669.1; -.
 CC EMBL; M54947; AA35529.1; -.
 CC EMBL; M54951; AA35529.1; JOINED.
 CC EMBL; K02399; AA35528.1; -.
 CC PIR; A22693; AMHU.
 CC PDB; 1ANP; 07-APR-95.
 CC Genew; HGNC:7939; NPPA.
 CC MIM; 108780; -.
 CC GO; GO:0005576; C:extracellular; NAS.
 CC GO; GO:0005179; F:hormone activity; NAS.
 CC GO; GO:0008217; P:regulation of blood pressure; IDA.
 CC InterPro; IPR002407; At_natriurecep.
 CC InterPro; IPR002408; Br_natriurecep.
 CC InterPro; IPR000663; Natr_peptide.
 CC Pfam; PF00212; ANP; 1.
 CC PRINTS; PR00710; NATPEPTIDES.
 CC ProDom; PD005107; At_natriurecep; 1.
 CC ProDom; PD006651; Br_natriurecep; 2.
 CC SMART; SM00183; NAT_PEP; 1.
 CC PROSITE; PS00263; NATRIURETIC_PEPTIDE; 1.
 CC KX Vasocactive; Signal; Polymorphism; 3D-structure.
 CC FT SIGNAL; 1; 25
 CC FT PROPEP; 26; 55 CARDIOLATIN-RELATED PEPTIDE.
 CC FT PROPEP; 56; 122
 CC FT PEPTIDE; 124; 151 ATRIAL NATRIURETIC FACTOR.
 CC FT DISULFID; 130; 146 BY SIMILARITY.
 CC FT DISULFID; 130; 146

FT VARIANT 32 32 V -> M (in dbSNP:5063).
 FT FT
 FT VARIANT 152 153 /FTid=VAR_014579.
 FT FT Missing (in isoform 2).
 FT CONFLICT 65 65 /FTid=VAR_000594.
 FT FT E -> D (in REF. 6).
 SQ SEQUENCE 153 AA; 16708 MW; B38F03AA066A73BC CRC64;
 Query Match 51.5%; Score 87; DB 1; Length 153;
 Best Local Similarity 50.0%; Pred. No. 7,4e-06;
 Matches 15; Conservative 6; Mismatches 9; Indels 0; Gaps 0;
 Qy 1 SPKAWQSGCGRGKMDRISSSGIGCYLVR 30
 Db 121 APRSLRRSCGSGMDRIGAGSGIGNSFR 150
 RESULT 13
 ANF_RABIT STANDARD; PRT; 153 AA.
 ID ANF_RABIT
 AC P07500;
 DT 01-APR-1988 (Rel. 07, Created)
 DT 01-APR-1988 (Rel. 07, Last sequence update)
 DT 10-OCT-2003 (Rel. 42, Last annotation update)
 DE Atrial natriuretic factor precursor (ANF) (Atrial natriuretic peptide)
 DE (ANF) (Prepronatriuretin).
 GN NPPA.
 OS Oryctolagus cuniculus (Rabbit).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Lagomorpha; Leporidae; Oryctolagus.
 OX NCBI_Taxid:9986;
 RN [1]
 RP SEQUENCE FROM N.A.
 RX MEDLINE=86076957; PubMed=2934062;
 RA Oikawa S., Imai M., Imazuka C., Tawaragi Y., Nakazato H., Matsuo H.;
 RT "Structure of dog and rabbit precursors of atrial natriuretic
 polypeptides deduced from nucleotide sequence of cloned cDNA.";
 RL Biochem. Biophys. Res. Commun. 132:892-899(1985).
 CC -1- FUNCTION: Atrial natriuretic factor (ANF) is a potent vasodilator
 substance synthesized in mammalian atria and is thought to play a
 key role in cardiovascular homeostasis. Has a cGMP-stimulating
 activity.
 CC -1- SUBCELLULAR LOCATION: Secreted.
 CC -1- MISCELLANEOUS: A disulfide bond is required for full activity of
 atriopeptins.
 CC -1- SIMILARITY: Belongs to the natriuretic peptide family.
 CC -----
 CC This SWISS-PROT entry is copyright. It is produced through a collaboration
 between the Swiss Institute of Bioinformatics and the EMBL outstation -
 the European Bioinformatics Institute. There are no restrictions on its
 use by non-profit institutions as long as its content is in no way
 modified and this statement is not removed. Usage by and for commercial
 entities requires a license agreement (See <http://www.isb-sib.ch/announce/>
 or send an email to license@isb-sib.ch).
 CC -----
 CC EMBL; M12046; AA31162.1; -.
 CC PIR; B25302; AMRB.
 CC InterPro; IPR002407; At_natriurecep.
 CC InterPro; IPR002408; Br_natriurecep.
 CC InterPro; IPR000663; Natr_peptide.
 CC Pfam; PF00212; ANP; 1.
 CC PRINTS; PR00710; NATPEPTIDES.
 CC ProDom; PD005107; At_natriurecep; 1.
 CC ProDom; PD006651; Br_natriurecep; 2.
 CC SMART; SM00183; NAT_PEP; 1.
 CC PROSITE; PS00263; NATRIURETIC_PEPTIDE; 1.
 CC KX Vasocactive; Signal.
 CC FT SIGNAL; 1; 25 POTENTIAL.
 CC FT PROPEP; 26; 122
 CC FT PEPTIDE; 124; 151 ATRIAL NATRIURETIC FACTOR.
 CC FT DISULFID; 130; 146
 CC SQ SEQUENCE 153 AA; 16843 MW; 8214A56D073D3236 CRC64;
 Query Match 49.1%; Score 83; DB 1; Length 153;

Best Local Similarity 46.7%; Pred. No. 2.9e-05;
Matches 14; Conservative 7; Mismatches 9; Indels 0; Gaps 0;

QY 1 SPKMGSGCGFKRMDRISSSGIGCKVLR 30
121 APRSLRSSCFGGRIDRIAGASGLGNSFR 150

RESULT 14
ANFB RAT STANDARD; PRT; 121 AA.
ID ANFB RAT STANDARD; PRT; 121 AA.
AC P13205;
DT 01-JAN-1990 (Rel. 13, Created)
DT 01-FEB-1991 (Rel. 17, Last sequence update)
DT 15-MAR-2004 (Rel. 43, Last annotation update)
DE Brain natriuretic peptide precursor (BNP) (5 kDa cardiac natriuretic peptide) (ISO-ANP).
GN NPPB.
OS Rattus norvegicus (Rat).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
OX NCBI_TaxId=10116;
RN 1)
RP SEQUENCE FROM N.A.
RX MEDLINE=89193742; PubMed=2522776;
RA Kojima M., Minamino N., Kangawa K., Matsuo H.;
RT "Cloning and sequence analysis of cDNA encoding a precursor for rat brain natriuretic peptide."
RL Biochem. Biophys. Res. Commun. 159:1420-1426(1989).
RN 2)
RP SEQUENCE FROM N.A.
RX MEDLINE=90365739; PubMed=2144113;
RA Roy R.N., Flynn T.G.;
RT "Organization of the gene for iso-rANP, a rat B-type natriuretic peptide."
RL Biochem. Biophys. Res. Commun. 171:416-423(1990).
RN 3)
RP SEQUENCE FROM N.A.
RX MEDLINE=92123224; PubMed=1837590;
RA Dagnino L., Drouin J., Nemer M.;
RT "Differential expression of natriuretic peptide genes in cardiac and extracardiac tissues."
RL Mol. Endocrinol. 5:1292-1300(1991).
RN 4)
RP SEQUENCE OF 27-121.
RX MEDLINE=89374230; PubMed=2673236;
RA Abuyara M., Hino J., Minamino N., Kangawa K., Matsuo H.;
RT "Isolation and identification of rat brain natriuretic peptides in cardiac atrium."
RL Biochem. Biophys. Res. Commun. 163:226-237(1989).
RN 5)
RP SEQUENCE OF 77-121.
RC TISSUE=Heart;
RX MEDLINE=89374231; PubMed=2528349;
RA Kambayashi Y., Nakao K., Itoh H., Hosoda K., Saito Y., Yamada T., Mikiyama M., Arai H., Shitake G., Suga S.-I., Ogawa Y.,
RA Jongsaki M., Minamino N., Kangawa K., Matsuo H., Inouye K., Imura H.;
RT "Isolation and sequence determination of rat cardiac natriuretic peptide."
RL Biochem. Biophys. Res. Commun. 163:233-240(1989).
RN 6)
RP SEQUENCE OF 77-121.
RX MEDLINE=89286593; PubMed=2525380;
RA Flynn T.G., Brar A., Tremblay L., Sarda I., Lyons C., Jennings D.B.;
RT "Isolation and characterization of iso-rANP, a new natriuretic peptide from rat atria."
RL Biochem. Biophys. Res. Commun. 161:830-837(1989).
RN 7)
RP SEQUENCE OF 99-115.
RX MEDLINE=89286579; PubMed=2525379;
RA Itoh H., Nakao K., Kambayashi Y., Hosoda K., Saito Y., Yamada T., Mikiyama M., Arai H., Shitake G., Suga S.-I., Yoshida I., Inouye K., Imura H.;

RT "Occurrence of a novel cardiac natriuretic peptide in rats."
RL Biochem. Biophys. Res. Commun. 161:732-739(1989).
CC -1- FUNCTION: Acts as a cardiac hormone with a variety of biological actions including natriuresis, diuresis, vasorelaxation, and inhibition of renin and aldosterone secretion. It is thought to play a key role in cardiovascular homeostasis. Helps restore the body's salt and water balance. Improves heart function.
CC -1- SUBCELLULAR LOCATION: Secreted.
CC -1- TISSUE SPECIFICITY: Brain and also in atria, but at much lower levels than ANP.
CC -1- SIMILARITY: Belongs to the natriuretic peptide family.
CC -----
CC This SWISS-PROT entry is copyrighted. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation - the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See [http://www.isb-sib.ch/announce/](http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch) or send an email to license@isb-sib.ch).
CC -----
DR EMBL; M25297; AAA57269.1; -;
DR EMBL; M60731; AAA4456.1; -;
DR EMBL; M60266; AAA4455.1; -;
DR PIR; A30162; A30162.
DR InterPro; IPR002408; Br_natriureticpep.
DR InterPro; IPR000663; Natri_peptide.
DR Pfam; PF00212; ANP; 1.
DR PROSITE; PRO0710; NATPEPTIDES.
DR PRINTS; PD06651; Br_natriureticpep; 1.
DR SMART; SM00183; NAT_PEP; 1.
DR PROSITE; PS00263; NATRIURETIC_PEPTIDE; 1.
DR Vasoactive; Signal.
FT SIGNAL 1 26
FT PEPTIDE 27 121 GAMMA-BRAIN NATRIURETIC PEPTIDE.
FT PEPTIDE 77 121 BRAIN NATRIURETIC PEPTIDE (5 kDa CARDIAC
FT PEPTIDE 99 115 NATRIURETIC PEPTIDE) (BNP-45).
FT DISULFID 99 115 L -> V (IN REF. 2).
FT CONFLICT 15 15 L -> Q (IN REF. 6).
FT CONFLICT 120 120
SQ SEQUENCE 121 AA; 13656 MW; B5D415BD18C7294 CRC64;
Query Match 48.5%; Score 82; DB 1; Length 121;
Best Local Similarity 57.1%; Pred. No. 3.2e-05;
Matches 16; Conservative 3; Mismatches 9; Indels 0; Gaps 0;
QY 3 KMGVSGCGFKRMDRISSSGIGCKVLR 30
DB 92 KMAHSSSCFGKIDRIAGVRLGCDGLR 119
RESULT 15
ANFB MOUSE STANDARD; PRT; 152 AA.
ID ANFB MOUSE STANDARD; PRT; 152 AA.
AC P05125;
DT 13-AUG-1987 (Rel. 05, Created)
DT 13-AUG-1987 (Rel. 05, Last sequence update)
DT 10-OCT-2003 (Rel. 42, Last annotation update)
DE Atrial natriuretic factor precursor (ANF) (Atrial natriuretic peptide) (ANP) (Prepronatriureticin).
GN NPPA OR PND.
OS Mus musculus (Mouse).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
OX NCBI_TaxId=10090;
RN 1)
RP SEQUENCE FROM N.A.
RX MEDLINE=85065766; PubMed=6542248;
RA Seidman C.E., Bloch K.D., Klein K.A., Smith V.A., Seidman J.G.;
RT "Nucleotide sequences of the human and mouse atrial natriuretic factor genes."
RL Science 226:1206-1209(1984).
CC -1- FUNCTION: Atrial natriuretic factor (ANF) is a potent vasoactive substance synthesized in mammalian atria and is thought to play a

```

CC      key role in cardiovascular homeostasis. Has a cGMP-stimulating
CC      activity.
CC      -1- SUBCELLULAR LOCATION: Secreted.
CC      -1- MISCELLANEOUS: A disulfide bond is required for full activity of
CC      atriopeptin.
CC      -1- SIMILARITY: Belongs to the natriuretic peptide family.
CC      -----
CC      This SWISS-PROT entry is copyright. It is produced through a collaboration
CC      between the Swiss Institute of Bioinformatics and the EMBL outstation -
CC      the European Bioinformatics Institute. There are no restrictions on its
CC      use by non-profit institutions as long as its content is in no way
CC      modified and this statement is not removed. Usage by and for commercial
CC      entities requires a license agreement (See http://www.isb-sib.ch/announce/
CC      or send an email to license@isb-sib.ch).
CC      -----
DR      EMBL; K02781; AAA37235.1; -.
DR      PIR; A29370; AMMS.
DR      MGD; MGI:97367; NPPa.
DR      InterPro; IPR002407; At_natriurecep.
DR      InterPro; IPR000663; Natf_peptide.
DR      Pfam; PF00212; ANP; 1.
DR      PRINTS; PR00710; NATPEPTIDES.
DR      ProDom; PD005107; At_natriurecep; 1.
DR      SMART; SM00183; NAT_PEP; 1.
DR      PROSITE; PS00263; NATRIURETIC_PEPTIDE; 1.
KM      Vasoactive; Signal.
FT      SIGNAL      1      24      POTENTIAL.
FT      PROPEP      25      124
FT      PEPTIDE      126      149      AURICULIN A (BY SIMILARITY).
FT      PEPTIDE      126      150      AURICULIN B (BY SIMILARITY).
FT      PEPTIDE      127      149      ATRIOPEPTIN I (BY SIMILARITY).
FT      PEPTIDE      127      147      ATRIOPEPTIN II (BY SIMILARITY).
FT      DISULFID      129      145      BY SIMILARITY.
SQ      SEQUENCE      152 AA; 16645 MM; FC8CC43EAFCA227 CRC64;

```

```

Query Match      48.5%; Score 82; DB 1; Length 152;
Best Local Similarity 48.3%; Pred. No. 4.1e-05;
Matches 14; Conservative 6; Mismatches 9; Indels 0; Gaps 0;

```

```

QY      2 PKWVQSGSGFGKMKDRISSSGGLGCKVLR 30
      |::|::|::|::|::|::|::|::|::|
Db      121 PSLRRSCTFGGRIDRIGAGSGLCNSFR 149

```

Search completed: March 29, 2004, 14:41:50
 Job time : 11 secs

GenCore version 5.1.6
Copyright (c) 1993 - 2004 Compugen Ltd.

OM protein - protein search, using sw model

Run on: March 29, 2004, 14:36:39 ; Search time 39 Seconds
(without alignments)
258.887 Million cell updates/sec

Title: US-09-902-517-49

Perfect score: 169
Sequence: 1 SPMVQSGCGFRKMDRISSSGLGCKVLRH 32

Scoring table: BLOSUM62
Gapop 10.0, Gapext 0.5

Searched: 1017041 seqs, 315518202 residues

Total number of hits satisfying chosen parameters: 1017041

Minimum DB seq length: 0
Maximum DB seq length: 200000000

Post-processing: Minimum Match 0%
Maximum Match 100%

Listing first 45 summaries

Database :
1: sp_archaea:*
2: sp_bacteria:*
3: sp_fungi:*
4: sp_human:*
5: sp_invertebrate:*
6: sp_mammal:*
7: sp_mhc:*
8: sp_organelle:*
9: sp_phage:*
10: sp_plant:*
11: sp_protent:*
12: sp_virus:*
13: sp_vertebrate:*
14: sp_unclassified:*
15: sp_virus:*
16: sp_bacteriap:*
17: sp_archaeap:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	118	69.8	112	6 Q9GLK5	Q9GLK5 felis silve
2	118	69.8	132	6 Q9GLK4	Q9GLK4 felis silve
3	96	56.8	126	13 Q8AYR5	Q8AYR5 oryzias lat
4	92	54.4	146	13 Q7T217	Q7T217 oncorhynch
5	92	54.4	152	13 Q9YUJ1	Q9YUJ1 salmo salar
6	91	53.8	138	13 Q805F8	Q805F8 oreochromis
7	91	53.8	146	13 Q7T102	Q7T102 oryzias lat
8	90	53.3	130	13 Q805D5	Q805D5 fugu rubrip
9	88	52.1	162	5 Q7Y2U5	Q7Y2U5 eptatretus
10	87	51.5	152	6 Q9TQW1	Q9TQW1 balaeopler
11	87	51.5	153	6 Q9GLD0	Q9GLD0 felis silve
12	87	51.5	155	6 Q29130	Q29130 tupais bela
13	86	50.9	181	13 Q90Y12	Q90Y12 crocalus du
14	86	50.9	181	13 Q90Y11	Q90Y11 crocalus du
15	83	49.1	140	13 Q805E9	Q805E9 oreochromis
16	82	48.5	120	13 Q805D3	Q805D3 fugu rubrip

17	82	48.5	121	13 Q80017	Q80017 oryzias lat
18	82	48.5	133	13 Q805D7	Q805D7 fugu rubrip
19	82	48.5	152	11 Q8VH2	Q8VH2 notomys ale
20	81	47.9	139	13 P79799	P79799 micrurus co
21	79	46.7	33	11 Q9QZ96	Q9QZ96 cavia porce
22	79	46.7	126	13 Q805D6	Q805D6 fugu rubrip
23	79	46.7	131	13 Q8AYR6	Q8AYR6 oryzias lat
24	79	46.7	131	13 Q8AXR3	Q8AXR3 oncorhynch
25	79	46.7	131	13 Q8AXR2	Q8AXR2 oncorhynch
26	79	46.7	131	13 Q805E7	Q805E7 oreochromis
27	78	46.7	147	11 Q8VH3	Q8VH3 notomys ale
28	78	46.2	139	13 Q805D8	Q805D8 fugu rubrip
29	77	45.6	121	11 Q91V40	Q91V40 mus spicile
30	77	45.6	121	11 Q50586	Q50586 mus musculu
31	77	45.6	144	13 Q805E6	Q805E6 fundulus he
32	77	45.6	150	13 Q9P5V2	Q9P5V2 anguilla ja
33	76	45.0	140	13 Q9P5V1	Q9P5V1 anguilla ja
34	76	45.0	221	13 Q7T1M4	Q7T1M4 bothrops ja
35	76	45.0	263	13 Q9PT52	Q9PT52 agkistrodon
36	76	45.0	265	13 Q80G91	Q80G91 bothrops in
37	75	44.4	111	6 Q8HXV7	Q8HXV7 pan troglod
38	75	44.4	111	6 Q8HXV6	Q8HXV6 gorilla gor
39	75	44.4	111	6 Q8HXV5	Q8HXV5 pongo pygma
40	75	44.4	111	6 Q8HXV4	Q8HXV4 macaca sp.
41	75	44.4	111	6 Q8HXV3	Q8HXV3 saginus oe
42	75	44.4	136	13 Q98U17	Q98U17 triakis scy
43	75	44.4	265	13 Q9PM56	Q9PM56 bothrops ja
44	72	42.6	150	13 Q90X61	Q90X61 bufo marinu
45	71.5	42.3	147	13 Q9DGK6	Q9DGK6 xenopus lae

ALIGNMENTS

RESULT 1

ID Q9GLK5 PRELIMINARY; PRT; 112 AA.

AC Q9GLK5
DT 01-MAR-2001 (TrEMBLrel. 16, last sequence update)
DT 01-JUN-2003 (TrEMBLrel. 24, last annotation update)
DE Brain natriuretic peptide (Fragment).
OS Felis silvestris catus (Cat).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Carnivora; Fissipedia; Felidae; Felie.
OX NCBI Taxid=9685;
RN [1]
RP SEQUENCE FROM N.A.
RA Liu Z.L., Wiedmeyer C.B., Solter P.F., Sisson D.D.;
RT "cat brain natriuretic peptide gene";
RL Submitted (MAR-2000) to the EMBL/GenBank/DBJ databases.
DR EMBL; AF251261; A013660.1; -
DR GO; GO:0005576; C:extracellular; IEA.
DR GO; GO:0005179; F:hormone activity; IEA.
DR InterPro; IPR002408; Br_natriuretic.
DR InterPro; IPR000663; Natriuretic_peptide.
DR Pfam; PF00212; ANP; 1.
DR PRINTS; PRO0710; Natriuretic.
DR ProDom; PD006651; Br_natriuretic; 1.
DR SMART; SM00183; NAT_PEP; 1.
DR PROSITE; PS00263; Natriuretic_peptide; 1.
FT NON_TER 1
FT NON_TER 112
SQ SEQUENCE 112 AA; 12083 MW; 580224F12984FFB2 CRC64;

Query Match

Best Local Similarity 69.8%; Score 118; DB 6; Length 112;
Matches 22; Conservativity 68.8%; Pred. No. 1.1e-09; Mismatches 6; Indels 0; Gaps 0;

Oy 1 SPMVQSGCGFRKMDRISSSGLGCKVLRH 32
Db 81 SSMQMRDSRFGRRLRIGSLGICNVLRH 112

RESULT 2

Q9GKL4 PRELIMINARY; PRT; 132 AA.

AC Q9GKL4; 01-MAR-2001 (TREMBlrel. 16, Created)

DT 01-MAR-2001 (TREMBlrel. 16, Last sequence update)

DT 01-JUN-2003 (TREMBlrel. 24, Last annotation update)

DE Brain natriuretic peptide.

GN BNP

OS Felis silvestris catus (Cat).

OC Eukaryota; Metazoa; Chordata; Vertebrata; Euteleostomi;

OC Mammalia; Eutheria; Carnivora; Fissipedia; Felidae; Felis.

OX NCBI_TaxID=9685;

RN [1]

RP SEQUENCE FROM N.A.

RC TISSUE=Heart atrium.

RA Liu Z.L., Wiedmeyer C.E., Solter P.F., Sisson D.D.;

RT "Cat mRNA for brain natriuretic peptide (BNP).";

RL Submitted (APR-2000) to the EMBL/GenBank/DBJ databases.

RN [2]

RP SEQUENCE FROM N.A.

RA Liu Z.L.;

RT "Felis catus brain natriuretic peptide (BNP) gene.";

RL Submitted (SEP-2001) to the EMBL/GenBank/DBJ databases.

DR EMBL; AF253495; AAG13661.1; -

DR EMBL; AF425738; AAL24812.1; -

DR GO; GO:0005576; C:extracellular; IEA.

DR GO; GO:0005179; F:hormone activity; IEA.

DR InterPro; IPR002408; Br_natriurecep.

DR InterPro; IPR000663; Natf_peptide.

DR Pfam; PF00212; ANP; 1.

DR PRINTS; PR00710; NATPEPTIDES.

DR PRODOM; PD006651; Br_natriurecep; 1.

DR SMART; SM00183; NAT_PEP; 1.

DR PROSITE; PS00263; NATRIURETIC_PEP_TIDE; 1.

SQ SEQUENCE 132 AA; 14343 MW; D069B5F76AC3510 CRC64;

Query Match 69.8%; Score 118; DB 6; Length 132;

Best Local Similarity 68.8%; Pred. No. 1.4e-09;

Matches 22; Conservative 4; Mismatches 6; Indels 0; Gaps 0;

Cy 1 SPRKVGSGCGFRKMDRISSSGGLGCKVLRH 32

Db 101 SSKWMBDSRCRCGRRLDRIGSLGGLCNVLRH 132

RESULT 3

Q8AYR5 PRELIMINARY; PRT; 126 AA.

AC Q8AYR5; 01-MAR-2003 (TREMBlrel. 23, Created)

DT 01-MAR-2003 (TREMBlrel. 23, Last sequence update)

DT 01-OCT-2003 (TREMBlrel. 25, Last annotation update)

DE C-type natriuretic peptide-2.

GN CNP-2.

OS Oryzias latipes (Medaka fish) (Japanese ricefish).

OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;

OC Actinopterygii; Neopterygii; Teleostei; Euteleostei;

OC Acanthomorphi; Acanthopterygii; Percormorpha; Atherinomorphi;

OC Belontiiformes; Atherinichthyidae; Oryziinae; Oryzias.

OX NCBI_TaxID=8090;

RN [1]

RP SEQUENCE FROM N.A.

RA Inoue K., Takei Y.;

RT "C-type natriuretic peptide of medaka (Oryzias latipes).";

RL Submitted (MAR-2002) to the EMBL/GenBank/DBJ databases.

DR EMBL; AB081456; BAC15761.1; -

DR GO; GO:0005576; C:extracellular; IEA.

DR GO; GO:0005179; F:hormone activity; IEA.

DR InterPro; IPR000663; Natr_peptide.

DR Pfam; PF00212; ANP; 1.

DR PRINTS; PR00710; NATPEPTIDES.

DR SMART; SM00183; NAT_PEP; 1.

DR PROSITE; PS00263; NATRIURETIC_PEP_TIDE; 1.

SQ SEQUENCE 126 AA; 13400 MW; 9D5D7B8DDECF0F92 CRC64;

Query Match 56.8%; Score 96; DB 13; Length 126;

Best Local Similarity 78.3%; Pred. No. 2.4e-06;

Matches 18; Conservative 0; Mismatches 5; Indels 0; Gaps 0;

Cy 4 MVQSGCGFRKMDRISSSGGLGCK 26

Db 104 MVQSGCGFRKMDRISSSGGLGCK 126

RESULT 4

Q7T217 PRELIMINARY; PRT; 146 AA.

AC Q7T217; 01-OCT-2003 (TREMBlrel. 25, Created)

DT 01-OCT-2003 (TREMBlrel. 25, Last sequence update)

DT 01-OCT-2003 (TREMBlrel. 25, Last annotation update)

DE Atrial natriuretic peptide.

GN ANP.

OS Oncorhynchus mykiss (Rainbow trout) (Salmo gairdneri).

OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;

OC Actinopterygii; Neopterygii; Teleostei; Euteleostei;

OC Proacanthopterygii; Salmoniformes; Salmonidae; Oncorhynchus.

OX NCBI_TaxID=8022;

RN [1]

RP SEQUENCE FROM N.A.

RA Inoue K., Russel M.J., Olson K.R., Takei Y.;

RT "C-type natriuretic peptide of rainbow trout (Oncorhynchus mykiss).";

RL Submitted (DEC-2001) to the EMBL/GenBank/DBJ databases.

DR EMBL; AB076603; BAC77769.1; -

SQ SEQUENCE 146 AA; 16043 MW; FED2CE3C79121BD0 CRC64;

Query Match 54.4%; Score 92; DB 13; Length 146;

Best Local Similarity 70.8%; Pred. No. 1.1e-05;

Matches 17; Conservative 2; Mismatches 5; Indels 0; Gaps 0;

Cy 8 SGGFRKMDRISSSGGLGCKVLR 31

Db 122 SGGFRKMDRISSSGGLGCKSPRR 145

RESULT 5

Q9YG1 PRELIMINARY; PRT; 152 AA.

AC Q9YG1; 01-MAY-1999 (TREMBlrel. 10, Created)

DT 01-MAY-1999 (TREMBlrel. 10, Last sequence update)

DT 01-JUN-2003 (TREMBlrel. 24, Last annotation update)

DE Cardiac hormone (Cardiac peptide precursor).

GN Salmo salar (Atlantic salmon).

OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;

OC Actinopterygii; Neopterygii; Teleostei; Euteleostei;

OC Proacanthopterygii; Salmoniformes; Salmonidae; Salmo.

OX NCBI_TaxID=8030;

RN [1]

RP SEQUENCE FROM N.A.

RA Teronen V., Arjamaa O., Ruskoaho H., Vuolteenaho O.;

RT "New vasorelaxant cardiac hormone released by mechanical load.";

RL Submitted (SEP-1997) to the EMBL/GenBank/DBJ databases.

RN [2]

RP SEQUENCE OF 5-152 FROM N.A.

RA Majalahti-Palvahtinen T., Hirvonen M., Teronen V., Vuolteenaho O.;

RT "Gene structure of a novel cardiac peptide related to natriuretic peptides from Salmo salar.";

RL Submitted (MAY-1998) to the EMBL/GenBank/DBJ databases.

DR EMBL; AF001806; CAA05022.1; -

DR EMBL; AF006421; CAA07023.1; -

DR GO; GO:0005576; C:extracellular; IEA.

DR GO; GO:0005179; F:hormone activity; IEA.

```

DR InterPro; IPR000663; Natr_peptide.
DR Pfam; PF00212; ANP; 1.
DR PRINTS; PR00710; NATPEPTIDES.
DR SMART; SM00183; NAT_PEP; 1.
DR PROSITE; PS00263; NATRIURETIC_PEPTIDE; 1.
KM Signal.
FT CHAIN 124 152 CARDIAC_HORMONE.
SQ SEQUENCE 152 AA; 16740 MW; E1D3E38A159CEEBA CRC64;

Query Match 54.4%; Score 92; DB 13; Length 152;
Best Local Similarity 70.8%; Pred. No. 1.1e-05;
Matches 17; Conservative 2; Mismatches 5; Indels 0; Gaps 0;

```

```

OY 8 SGCFCGRKMDRISSSSGLGCKYLRR 31
Db 128 SGCFCGRKMDRISSSSGLGCKYLRR 151

RESULT 6
O805E8 PRELIMINARY; PRT; 138 AA.
AC O805E8;
DT 01-JUN-2003 (TrEMBLrel. 24, Created)
DT 01-JUN-2003 (TrEMBLrel. 24, Last sequence update)
DT 01-OCT-2003 (TrEMBLrel. 25, Last annotation update)
DE B-type natriuretic peptide.
GN BNP.
OS Oreochromis mossambicus (Mozambique tilapia) (Tilapia mossambica).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Actinopterygii; Neopterygii; Teleostei; Euteleostei; Neoteleostei;
OC Acanthomorpha; Acanthopterygii; Percomorpha; Perciformes; Labroidae;
OC Cichlidae; Oreochromis.
OX NCBI_TaxID=8127;
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE=Heart;
RA Inoue K., Takei Y.;
RT "Natriuretic Peptides of Tilapia."
RL Submitted (JUL-2002) to the EMBL/GenBank/DBJ databases.
DR EMBL; AB087284; BAC55025.1; -.
DR GO; GO:0005576; C:extracellular; IEA.
DR GO; GO:0005179; F:hormone activity; IEA.
DR InterPro; IPR000663; Natr_peptide.
DR Pfam; PF00212; ANP; 1.
DR PRINTS; PR00710; NATPEPTIDES.
DR SMART; SM00183; NAT_PEP; 1.
DR PROSITE; PS00263; NATRIURETIC_PEPTIDE; 1.
SQ SEQUENCE 138 AA; 15189 MW; 5A023AB1F4F452FA CRC64;

```

```

Query Match 53.8%; Score 91; DB 13; Length 138;
Best Local Similarity 59.3%; Pred. No. 1.4e-05;
Matches 16; Conservative 4; Mismatches 7; Indels 0; Gaps 0;

```

```

OY 6 QSGCGFRKMDRISSSSGLGCKYLRRH 32
Db 107 RSSGCGFRKMDRISSSSGLGCKYLRRH 133

RESULT 7
O7T1Q2 PRELIMINARY; PRT; 146 AA.
AC O7T1Q2;
DT 01-OCT-2003 (TrEMBLrel. 25, Created)
DT 01-OCT-2003 (TrEMBLrel. 25, Last sequence update)
DT 01-OCT-2003 (TrEMBLrel. 25, Last annotation update)
DE B-type natriuretic peptide.
GN BNP.
OS Oryzias latipes (Medaka fish) (Japanese ricefish).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Actinopterygii; Neopterygii; Teleostei; Euteleostei; Neoteleostei;
OC Acanthomorpha; Acanthopterygii; Percomorpha; Atherinomorpha;
OC Belontiiformes; Adrianichthyidae; Oryziinae; Oryzias.
OX NCBI_TaxID=8090;

```

```

RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE=Heart;
RA Inoue K., Takei Y.;
RT "B-type natriuretic peptide of medaka Oryzias latipes."
RL Submitted (JAN-2003) to the EMBL/GenBank/DBJ databases.
DR EMBL; AB099700; BAC79151.1; -.
SQ SEQUENCE 146 AA; 16455 MW; E0EA2C0C70DAD51F CRC64;

Query Match 53.8%; Score 91; DB 13; Length 146;
Best Local Similarity 59.3%; Pred. No. 1.5e-05;
Matches 16; Conservative 4; Mismatches 7; Indels 0; Gaps 0;

```

```

OY 6 QSGCGFRKMDRISSSSGLGCKYLRRH 32
Db 117 RSSGCGFRKMDRISSSSGLGCKYLRRH 143

RESULT 8
O805D5 PRELIMINARY; PRT; 130 AA.
AC O805D5;
DT 01-JUN-2003 (TrEMBLrel. 24, Created)
DT 01-JUN-2003 (TrEMBLrel. 24, Last sequence update)
DT 01-OCT-2003 (TrEMBLrel. 25, Last annotation update)
DE C-type natriuretic peptide-2.
GN CNP-2.
OS Fugu rubripes (Japanese pufferfish) (Takifugu rubripes).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Actinopterygii; Neopterygii; Teleostei; Euteleostei; Neoteleostei;
OC Acanthomorpha; Acanthopterygii; Percomorpha; Tetraodontiformes;
OC Tetraodontidae; Tetraodontidae; Takifugu.
OX NCBI_TaxID=31033;
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE=Brain;
RA Inoue K., Takei Y.;
RT "Six natriuretic peptide genes in the pufferfish genome."
RL Submitted (AUG-2002) to the EMBL/GenBank/DBJ databases.
DR EMBL; AB089936; BAC5702.1; -.
DR GO; GO:0005576; C:extracellular; IEA.
DR GO; GO:0005179; F:hormone activity; IEA.
DR InterPro; IPR000663; Natr_peptide.
DR Pfam; PF00212; ANP; 1.
DR PRINTS; PR00710; NATPEPTIDES.
DR SMART; SM00183; NAT_PEP; 1.
DR PROSITE; PS00263; NATRIURETIC_PEPTIDE; 1.
SQ SEQUENCE 130 AA; 13792 MW; 41B1FC1A5F7E4C CRC64;

```

```

Query Match 53.3%; Score 90; DB 13; Length 130;
Best Local Similarity 73.9%; Pred. No. 1.9e-05;
Matches 17; Conservative 1; Mismatches 5; Indels 0; Gaps 0;

```

```

OY 4 MVQSGCGFRKMDRISSSSGLGCK 26
Db 108 MVQSGCGFRKMDRISSSSGLGCK 130

RESULT 9
O7YZU5 PRELIMINARY; PRT; 162 AA.
AC O7YZU5;
DT 01-OCT-2003 (TrEMBLrel. 25, Created)
DT 01-OCT-2003 (TrEMBLrel. 25, Last sequence update)
DT 01-OCT-2003 (TrEMBLrel. 25, Last annotation update)
DE Natriuretic peptide.
GN Eprattetus burgeri (Inshore hagfish).
OC Eukaryota; Metazoa; Chordata; Craniata; Hyperotreti; Myxiniiformes;
OC Myxiniidae; Eptacretinae; Eptacretus.
OX NCBI_TaxID=7764;
RN [1]
RP SEQUENCE FROM N.A.
RA Kawakoshi A., Hyodo S., Takei Y.;

```

```

RT      "Hagfish natriuretic peptide precursor mRNA of Epiplatys burgeri.",
RL      Submitted (JUN-2002) to the EMBL/GenBank/DBJ databases.
DR      EMBL; AB079732; BAC78816.1;
SQ      CHAIN 94 161 NATRIURETIC PEPTIDE.
QT      SEQUENCE 162 AA; 18220 MW; F4B86403F1A48F7 CRC64;

OY      9 GCGFRKMDRISSSGLGCKVLR 31
Db      135 GCGFYKMDRIGKSTGLGCRGR 157

Query Match
Best Local Similarity 52.1%; Score 88; DB 5; Length 162;
Matches 16; Conservative 3; Mismatches 4; Indels 0; Gaps 0;

RESULT 10
O9TQW1  O9TQW1      PRELIMINARY; PRT; 152 AA.
AC      O9TQW1:
DT      01-MAY-2000 (TREMBLrel. 13, Created)
DT      01-MAY-2000 (TREMBLrel. 13, Last sequence update)
DT      01-JUN-2003 (TREMBLrel. 24, Last annotation update)
DE      Atrial natriuretic peptide precursor.
OS      Balaenoptera physalus (Finback whale) (Common roqual).
OC      Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC      Mammalia; Eutheria; Cetartiodactyla; Cetacea; Mysticeti;
OC      Balaenopteridae; Balaenoptera.
OX      NCBI_TaxId=9770;
RN      [1]
RP      SEQUENCE FROM N.A.
RT      Tashten T.H., Vuolteenaho O.J.;
RL      "Structure of fin whale atrial natriuretic peptide cDNA.";
DR      EMBL; AJ006755; CAB65023.1; -.
DR      EMBL; AJ006785; CAB64785.1; -.
DR      GO; GO:0005576; C:cytoskeletal; IEA.
DR      GO; GO:0005179; P:hormone activity; IEA.
DR      InterPro; IPR000663; Natri_Peptide.
DR      Pfam; PF00212; ANP; 1.
DR      PRINTS; PR00710; NATPEPTIDES.
DR      SMART; SM00183; NAT_PEP; 1.
DR      PROSITE; PS00263; NATRIURETIC_PEPTIDE; 1.
KW      Signal.
FT      CHAIN 1 24 POTENTIAL.
FT      CHAIN 25 150 ATRIAL NATRIURETIC PEPTIDE.
SQ      SEQUENCE 152 AA; 16454 MW; 513133C654038F6 CRC64;

Query Match
Best Local Similarity 51.5%; Score 87; DB 6; Length 152;
Matches 15; Conservative 6; Mismatches 9; Indels 0; Gaps 0;

OY      1 SPKRWVGGSGFRKMDRISSSGLGCKVLR 30
Db      120 APRSLRBSCTFGKMDRIGAGSLGCSNR 149

RESULT 11
O9GLD0  O9GLD0      PRELIMINARY; PRT; 153 AA.
AC      O9GLD0:
DT      01-MAR-2001 (TREMBLrel. 16, Created)
DT      01-MAR-2001 (TREMBLrel. 16, Last sequence update)
DT      01-JUN-2003 (TREMBLrel. 24, Last annotation update)
DE      Atrial natriuretic peptide.
OS      Felis silvestris catus (Cat).
OC      Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC      Mammalia; Eutheria; Carnivora; Fissipedia; Felidae; Felis.
OX      NCBI_TaxId=9685;
RN      [1]
RP      SEQUENCE FROM N.A.
RT      Ricardo A.W., Liu Z.L., Solter P.F., Sisson D.D.;
RL      Submitted (AUG-2000) to the EMBL/GenBank/DBJ databases.
DR      EMBL; AF298813; AAG23837.1; -.

```

```

DR GO; GO:0005576; C:extracellular; IEA.
DR GO; GO:0005179; F:hormone activity; IEA.
DR InterPro: IPR000663; Natr_peptide.
DR Pfam: PF00212; ANP.
DR PRINTS: PR00710; NATPEPTIDES.
DR SMART: SM00183; NAT_PEP.
DR PROSITE: PS00263; NATRIURETIC_PEPTIDE; 1.
SQ SEQUENCE 153 AA; 16583 MW; 32DEBD205B285686 CRC64;

Query Match 51.5%; Score 87; DB 6; Length 153;
Best Local Similarity 50.0%; Pred. No. 6.3e-05;
Matches 15; Conservative 6; Mismatches 9; Indels 0; Gaps 0;

Cy 1 SPKAVQSGGCGFRKMDRISSSSGIGCKYLR 30
: : : : : : : : : : : : : : : :
Db 121 AFRSLRRSSCGFRGMDRIGAQSGIGCNSFR 150

RESULT 12
Q29130 PRELIMINARY; PRT; 155 AA.
ID Q29130.
AC 01-NOV-1996 (TREMBLrel. 01, Created)
DT 01-NOV-1996 (TREMBLrel. 01, Last sequence update)
DR 01-JUN-2003 (TREMBLrel. 24, Last annotation update)
DE Cardiolipatin, atrial natriuretic peptide.
OS Tupala belangeri (Northern tree shrew).
OC Eukaryota; Metazoa; Chordata; Craniota; Vertebrata; Euteleostomi;
OC Mammalia; Euheta; Scandentia; Tupalidae; Tupala.
OX NCBI_TaxId=37347;
RN [1]
RP SEQUENCE FROM N.A.
RC Tissue=Heart;
RA Schneidemann S., Maeger H.J., Forssmann W.G.;
RT "nucleotide sequence of the cDNA for Tupala belangeri cardiolipatin /
RT atrial natriuretic peptide."
RU Submitted (MAR-1996) to the EMBL/GenBank/DBJ databases.
[2]
RN [2]
RP SEQUENCE FROM N.A.
RC Tissue=Heart;
RA Pardigol A.;
RL Submitted (MAR-1996) to the EMBL/GenBank/DBJ databases.
DR EMBL; 270294; CAA94310.1; -.
DR GO; GO:0005576; C:extracellular; IEA.
DR GO; GO:0005179; F:hormone activity; IEA.
DR InterPro: IPR002408; B_natriutcep.
DR InterPro: IPR000663; Natr_peptide.
DR Pfam: PF00212; ANP.
DR PRINTS: PR00710; NATPEPTIDES.
DR Prodom: PD006651; B_natriutcep; 1.
DR SMART: SM00183; NAT_PEP.
DR PROSITE: PS00263; NATRIURETIC_PEPTIDE; 1.
SQ SEQUENCE 155 AA; 16860 MW; 22EF05A3748DAB66 CRC64;

Query Match 51.5%; Score 87; DB 6; Length 155;
Best Local Similarity 50.0%; Pred. No. 6.3e-05;
Matches 15; Conservative 6; Mismatches 9; Indels 0; Gaps 0;

Cy 1 SPKAVQSGGCGFRKMDRISSSSGIGCKYLR 30
: : : : : : : : : : : : : : : :
Db 123 AFRSLRRSSCGFRGMDRIGAQSGIGCNSFR 152

RESULT 13
Q29112 PRELIMINARY; PRT; 181 AA.
ID Q29112.
AC 01-DEC-2001 (TREMBLrel. 19, Created)
DT 01-DEC-2001 (TREMBLrel. 19, Last sequence update)
DR 01-JUN-2003 (TREMBLrel. 24, Last annotation update)
DE Bradykinin potentiating peptide and C-type natriuretic peptide isoform
OS Crocatus durissus terrificus (South American rattlesnake).

```

OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Lepidosauria; Squamata; Scleroglossa; Serpentes; Colubridae;
 OC Viperidae; Crotalinae; Crotalus.
 OC NCBI_TaxID=8732;
 RN [1]
 RP SEQUENCE FROM N.A.
 RC TISSUE=Venom gland;
 RA Hayashi M.A.F., Radis-Baptista G., Barbosa S.R., Yamane T.,
 RA Camargo A.C.M.;
 RT "Crotalus durissus terrificus bradykinin potentiating peptide
 precursor.";
 RL Submitted (SEP-2000) to the EMBL/GenBank/DBJ databases.
 DR EMBL; AF308593; AL09426.1;
 DR GO; GO:0005576; C:extracellular; IEA.
 DR GO; GO:0005179; F:hormone activity; IEA.
 DR InterPro; IPR000663; Natr_peptide.
 DR Pfam; PF00212; ANP; 1.
 DR PRINTS; PR00710; NATPEPTIDES.
 DR SMART; SM00183; NAT_PEP; 1.
 DR PROSITE; PS00263; NATRIURETIC_PEPTIDE; 1.
 SQ SEQUENCE 181 AA; 18560 MW; 7BSADCB9372D07F CRC64;

Query Match 50.9%; Score 86; DB 13; Length 181;
 Best Local Similarity 75.0%; Pred. No. 0.0001;
 Matches 15; Conservative 2; Mismatches 3; Indels 0; Gaps 0;

OY 7 GSGCGRMDRISSSSGLGC 26
 Db 162 GNGCGFKLDRIKSGWSGLGC 181

RESULT 14

ID 090Y11 PRELIMINARY; PRT; 181 AA.
 AC 090Y11;
 DT 01-DEC-2001 (TRENBLREL. 19, Created)
 DT 01-DEC-2001 (TRENBLREL. 19, Last sequence update)
 DT 01-JUN-2003 (TRENBLREL. 24, Last annotation update)
 DE Bradykinin potentiating peptide and C-type natriuretic peptide isoform
 2.
 OS Crotalus durissus terrificus (South American rattlesnake).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Lepidosauria; Squamata; Scleroglossa; Serpentes; Colubridae;
 OC Viperidae; Crotalinae; Crotalus.
 OC NCBI_TaxID=8732;
 RN [1]
 RP SEQUENCE FROM N.A.
 RC TISSUE=Venom gland;
 RA Hayashi M.A.F., Radis-Baptista G., Barbosa S.R., Yamane T.,
 RA Camargo A.C.M.;
 RT "Crotalus durissus terrificus bradykinin-potentiating peptide and C-
 type natriuretic peptide precursor isoform2."
 RL Submitted (SEP-2000) to the EMBL/GenBank/DBJ databases.
 DR EMBL; AF308594; AL09427.1;
 DR GO; GO:0005576; C:extracellular; IEA.
 DR GO; GO:0005179; F:hormone activity; IEA.
 DR InterPro; IPR000663; Natr_peptide.
 DR Pfam; PF00212; ANP; 1.
 DR PRINTS; PR00710; NATPEPTIDES.
 DR SMART; SM00183; NAT_PEP; 1.
 DR PROSITE; PS00263; NATRIURETIC_PEPTIDE; 1.
 SQ SEQUENCE 181 AA; 18507 MW; 9B2B5D38A5FE27 CRC64;

Query Match 50.9%; Score 86; DB 13; Length 181;
 Best Local Similarity 75.0%; Pred. No. 0.0001;
 Matches 15; Conservative 2; Mismatches 3; Indels 0; Gaps 0;

OY 7 GSGCGRMDRISSSSGLGC 26
 Db 162 GNGCGFKLDRIKSGWSGLGC 181

RESULT 15

Q80SE9
 ID Q80SE9 PRELIMINARY; PRT; 140 AA.
 AC Q80SE9;
 DT 01-JUN-2003 (TRENBLREL. 24, Created)
 DT 01-JUN-2003 (TRENBLREL. 24, Last sequence update)
 DT 01-OCT-2003 (TRENBLREL. 25, Last annotation update)
 DE Atrial natriuretic peptide.
 GN ANP.
 OS Oreochromis mossambicus (Mozambique tilapia) (Tilapia mossambica).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Actinopterygii; Neopterygii; Teleostei; Euteleostei; Neoteleostei;
 OC Acanthomorphi; Acanthopterygii; Percormorpha; Perciformes; Labroidae;
 OC Cichlidae; Oreochromis.
 OC NCBI_TaxID=8127;
 RN [1]
 RP SEQUENCE FROM N.A.
 RC TISSUE=Heart;
 RA Inoue K., Takei Y.;
 RT "Natriuretic peptides of Tilapia."
 RL Submitted (JUL-2002) to the EMBL/GenBank/DBJ databases.
 DR EMBL; AF087283; BAC55024.1;
 DR GO; GO:0005576; C:extracellular; IEA.
 DR GO; GO:0005179; F:hormone activity; IEA.
 DR InterPro; IPR002408; Br_natriuretic.
 DR InterPro; IPR000663; Natr_peptide.
 DR Pfam; PF00212; ANP; 1.
 DR PRINTS; PR00710; NATPEPTIDES.
 DR ProDom; PD006651; Br_natriureticpep; 1.
 DR SMART; SM00183; NAT_PEP; 1.
 DR PROSITE; PS00263; NATRIURETIC_PEPTIDE; 1.
 SQ SEQUENCE 140 AA; 15577 MW; 5F2D214FA560DB0F CRC64;

Query Match 49.1%; Score 83; DB 13; Length 140;
 Best Local Similarity 73.7%; Pred. No. 0.0002;
 Matches 14; Conservative 3; Mismatches 2; Indels 0; Gaps 0;

OY 8 GSGCGRMDRISSSSGLGC 26
 Db 117 GSGCGFKLDRIKSGWSGLGC 135

Search completed: March 29, 2004, 14:42:42
 Job time : 40 secs

GenCore version 5.1.6
Copyright (c) 1993 - 2004 CompuGen Ltd.

OM protein - protein search, using sw model

Run on: March 29, 2004, 14:41:55 ; Search time 14 Seconds
(without alignments)
41.857 Million cell updates/sec

Title: US-09-902-517-49

Perfect score: 169
1 SPKVVGGSGCFGRKMDRISSSGLGCKVLRH 32

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 152794 seqs, 18312476 residues

Total number of hits satisfying chosen parameters: 152794

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%

Listing first 45 summaries

Database : Pending Patents-AA New:*
1: /cgn2_6/ptodata/1/paa/PCT_NEW_COMB.pep:*
2: /cgn2_6/ptodata/1/paa/US06_NEW_COMB.pep:*
3: /cgn2_6/ptodata/1/paa/US07_NEW_COMB.pep:*
4: /cgn2_6/ptodata/1/paa/US08_NEW_COMB.pep:*
5: /cgn2_6/ptodata/1/paa/US09_NEW_COMB.pep:*
6: /cgn2_6/ptodata/1/paa/US10_NEW_COMB.pep:*
7: /cgn2_6/ptodata/1/paa/US60_NEW_COMB.pep:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match Length	DB ID	Description
1	169	100.0	32	US-10-775-204-1802 Sequence 1802, Ap
2	169	100.0	134	US-10-775-204-1277 Sequence 1277, Ap
3	169	100.0	641	US-10-775-204-1634 Sequence 1634, Ap
4	169	100.0	719	US-10-775-204-1275 Sequence 1275, Ap
5	87	51.5	32	US-10-775-204-2203 Sequence 2203, Ap
6	87	51.5	153	US-10-798-307-725 Sequence 725, App
7	78	46.2	28	US-10-775-204-2207 Sequence 2207, Ap
8	78	46.2	31	US-10-681-389-22 Sequence 22, Appl
9	50.5	29.9	657	PCR-US04-05092-28 Sequence 28, Appl
10	49	29.0	874	US-10-487-092-28 Sequence 18, Appl
11	47.5	28.1	1307	US-10-796-307-608 Sequence 608, App
12	46.5	27.5	147	US-10-767-701-46988 Sequence 46988, A
13	45	26.6	116	US-10-767-701-33741 Sequence 33741, A
14	45	26.6	182	US-10-767-701-32774 Sequence 32774, A
15	44.5	26.3	378	US-09-979-167-123 Sequence 123, App
16	44	26.0	219	US-10-100-683-8839 Sequence 8839, Ap
17	44	26.0	220	US-10-799-747-135 Sequence 135, App
18	44	26.0	241	US-10-767-701-35710 Sequence 35710, A
19	44	26.0	682	US-10-649-400-4 Sequence 4, Appli
20	43.5	25.7	209	PCR-US04-03854-1900 Sequence 1900, App
21	43	25.4	173	US-10-767-701-45583 Sequence 45583, A
22	43	25.4	331	US-10-767-701-46510 Sequence 46510, A
23	43	25.4	996	PCR-US04-05654-512 Sequence 512, App
24	42	24.9	145	US-10-767-701-44616 Sequence 44616, A
25	42	24.9	281	US-10-767-701-44746 Sequence 44746, A
26	42	24.9	312	US-10-767-701-45391 Sequence 45391, A

27	42	24.9	440	1	PCR-US04-05654-1132	Sequence 1132, Ap
28	41.5	24.6	133	6	US-10-767-701-43720	Sequence 43720, A
29	41.5	24.6	206	6	US-10-767-701-33413	Sequence 33413, A
30	41	24.3	88	6	US-10-767-701-49917	Sequence 49917, A
31	41	24.3	118	6	US-10-767-701-54561	Sequence 54561, A
32	41	24.3	132	6	US-10-793-479-7413	Sequence 7413, Ap
33	41	24.3	146	6	US-10-767-701-37821	Sequence 37821, A
34	41	24.3	176	6	US-10-767-701-57725	Sequence 57725, A
35	41	24.3	183	6	US-10-658-834A-902	Sequence 902, App
36	41	24.3	192	6	US-10-767-701-44425	Sequence 44425, A
37	41	24.3	235	6	US-10-767-701-38475	Sequence 38475, A
38	41	24.3	301	6	US-10-767-701-45101	Sequence 45101, A
39	41	24.3	338	1	PCR-US04-05654-1687	Sequence 1687, Ap
40	41	24.3	483	6	US-10-417-884A-4123	Sequence 4123, Ap
41	41	24.3	503	6	US-10-767-701-44045	Sequence 44045, A
42	41	24.3	553	6	US-10-775-337-4	Sequence 4, Appli
43	40.5	24.0	55	6	US-10-100-683-8936	Sequence 8936, Ap
44	40.5	24.0	101	6	US-10-767-701-62239	Sequence 62239, A
45	40.5	24.0	140	6	US-10-767-701-46730	Sequence 46730, A

ALIGNMENTS

```
RESULT 1
US-10-775-204-1802
; Sequence 1802, Application US/10775204
; GENERAL INFORMATION:
; APPLICANT: Rosen, Craig A.
; APPLICANT: Haseltine, William A.
; APPLICANT: Balance, David J.
; APPLICANT: Turner, Andrew J.
; TITLE OF INVENTION: Albumin Fusion Proteins
; FILE REFERENCE: PF564
; CURRENT APPLICATION NUMBER: US/10/775,204
; PRIOR FILING DATE: 2004-02-11
; PRIOR APPLICATION NUMBER: 60/341,811
; PRIOR FILING DATE: 2001-12-21
; PRIOR APPLICATION NUMBER: 60/360,000
; PRIOR FILING DATE: 2002-02-28
; PRIOR APPLICATION NUMBER: 60/378,950
; PRIOR FILING DATE: 2002-05-10
; PRIOR APPLICATION NUMBER: 60/398,008
; PRIOR FILING DATE: 2002-07-24
; PRIOR APPLICATION NUMBER: 60/411,355
; PRIOR FILING DATE: 2002-09-18
; PRIOR APPLICATION NUMBER: 60/414,984
; PRIOR FILING DATE: 2002-10-02
; PRIOR APPLICATION NUMBER: 60/417,611
; PRIOR FILING DATE: 2002-10-11
; PRIOR APPLICATION NUMBER: 60/420,246
; PRIOR FILING DATE: 2002-10-23
; PRIOR APPLICATION NUMBER: 60/423,623
; PRIOR FILING DATE: 2002-11-05
; PRIOR APPLICATION NUMBER: 60/351,360
; PRIOR FILING DATE: 2002-01-28
; Remaining Prior Application data removed - See File Wrapper or PALM.
; NUMBER OF SEQ ID NOS: 2222
; SOFTWARE: PatentIn Ver. 2.10
; SEQ ID NO 1802
; TYPE: PRT
; ORGANISM: Homo sapiens
US-10-775-204-1802

Query Match      100.0%; Score 169; DB 6; Length 32;
Best Local Similarity      Pred. No. 1.7e-16;
Matches      32; Conservative      0; Mismatches      0; Indels      0; Gaps      0;

Cy      1 SPKVVGGSGCFGRKMDRISSSGLGCKVLRH 32
Db      1 SPKVVGGSGCFGRKMDRISSSGLGCKVLRH 32
```

```
RESULT 2
US-10-775-204-1277
; Sequence 1277, Application US/10775204
; GENERAL INFORMATION:
; APPLICANT: Rosen, Craig A.
; APPLICANT: Haseltine, William A.
; APPLICANT: Balance, David J.
; APPLICANT: Turner, Andrew J.
; TITLE OF INVENTION: Albumin Fusion Proteins
; FILE REFERENCE: PF564
; CURRENT APPLICATION NUMBER: US/10775,204
; PENDING FILING DATE: 2004-02-11
; PRIOR APPLICATION NUMBER: 60/341,811
; PRIOR FILING DATE: 2001-12-21
; PRIOR APPLICATION NUMBER: 60/360,000
; PRIOR FILING DATE: 2002-02-28
; PRIOR APPLICATION NUMBER: 60/378,950
; PRIOR FILING DATE: 2002-05-10
; PRIOR APPLICATION NUMBER: 60/398,008
; PRIOR FILING DATE: 2002-07-24
; PRIOR APPLICATION NUMBER: 60/411,355
; PRIOR FILING DATE: 2002-09-18
; PRIOR APPLICATION NUMBER: 60/414,984
; PRIOR FILING DATE: 2002-10-02
; PRIOR APPLICATION NUMBER: 60/417,611
; PRIOR FILING DATE: 2002-10-11
; PRIOR APPLICATION NUMBER: 60/420,246
; PRIOR FILING DATE: 2002-10-23
; PRIOR APPLICATION NUMBER: 60/423,623
; PRIOR FILING DATE: 2002-11-05
; PRIOR APPLICATION NUMBER: 60/351,360
; PRIOR FILING DATE: 2002-01-28
; Remaining Prior Application data removed - See File Wrapper or PALM.
; NUMBER OF SEQ ID NOS: 2222
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 1277
; LENGTH: 134
; TYPE: PRT
; ORGANISM: Homo sapiens
US-10-775-204-1277

Query Match          100.0%; Score 169; DB 6; Length 134;
Best Local Similarity 100.0%; Pred. No. 8,3e-18;
Matches 32; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 SPMVGGGCGFGRKMDRISSSSGLGCKVLRH 32
Db 103 SPMVGGGCGFGRKMDRISSSSGLGCKVLRH 134

RESULT 3
US-10-775-204-1634
; Sequence 1634, Application US/10775204
; GENERAL INFORMATION:
; APPLICANT: Rosen, Craig A.
; APPLICANT: Haseltine, William A.
; APPLICANT: Balance, David J.
; APPLICANT: Turner, Andrew J.
; TITLE OF INVENTION: Albumin Fusion Proteins
; FILE REFERENCE: PF564
; CURRENT APPLICATION NUMBER: US/10775,204
; PENDING FILING DATE: 2004-02-11
; PRIOR APPLICATION NUMBER: 60/341,811
; PRIOR FILING DATE: 2001-12-21
; PRIOR APPLICATION NUMBER: 60/360,000
; PRIOR FILING DATE: 2002-02-28
; PRIOR APPLICATION NUMBER: 60/378,950
; PRIOR FILING DATE: 2002-05-10
; PRIOR APPLICATION NUMBER: 60/398,008
; PRIOR FILING DATE: 2002-07-24
; PRIOR APPLICATION NUMBER: 60/411,355
; PRIOR FILING DATE: 2002-09-18
```

```
; PRIOR APPLICATION NUMBER: 60/414,984
; PRIOR FILING DATE: 2002-10-02
; PRIOR APPLICATION NUMBER: 60/417,611
; PRIOR FILING DATE: 2002-10-11
; PRIOR APPLICATION NUMBER: 60/420,246
; PRIOR FILING DATE: 2002-10-23
; PRIOR APPLICATION NUMBER: 60/423,623
; PRIOR FILING DATE: 2002-11-05
; PRIOR APPLICATION NUMBER: 60/351,360
; PRIOR FILING DATE: 2002-01-28
; Remaining Prior Application data removed - See File Wrapper or PALM.
; NUMBER OF SEQ ID NOS: 2222
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 1634
; LENGTH: 641
; TYPE: PRT
; ORGANISM: Homo sapiens
US-10-775-204-1275

Query Match          100.0%; Score 169; DB 6; Length 641;
Best Local Similarity 100.0%; Pred. No. 4.7e-17;
Matches 32; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 SPMVGGGCGFGRKMDRISSSSGLGCKVLRH 32
Db 25 SPMVGGGCGFGRKMDRISSSSGLGCKVLRH 56

RESULT 4
US-10-775-204-1275
; Sequence 1275, Application US/10775204
; GENERAL INFORMATION:
; APPLICANT: Rosen, Craig A.
; APPLICANT: Haseltine, William A.
; APPLICANT: Balance, David J.
; APPLICANT: Turner, Andrew J.
; TITLE OF INVENTION: Albumin Fusion Proteins
; FILE REFERENCE: PF564
; CURRENT APPLICATION NUMBER: US/10775,204
; PENDING FILING DATE: 2004-02-11
; PRIOR APPLICATION NUMBER: 60/341,811
; PRIOR FILING DATE: 2001-12-21
; PRIOR APPLICATION NUMBER: 60/360,000
; PRIOR FILING DATE: 2002-02-28
; PRIOR APPLICATION NUMBER: 60/378,950
; PRIOR FILING DATE: 2002-05-10
; PRIOR APPLICATION NUMBER: 60/398,008
; PRIOR FILING DATE: 2002-07-24
; PRIOR APPLICATION NUMBER: 60/411,355
; PRIOR FILING DATE: 2002-09-18
; PRIOR APPLICATION NUMBER: 60/414,984
; PRIOR FILING DATE: 2002-10-02
; PRIOR APPLICATION NUMBER: 60/417,611
; PRIOR FILING DATE: 2002-10-11
; PRIOR APPLICATION NUMBER: 60/420,246
; PRIOR FILING DATE: 2002-10-23
; PRIOR APPLICATION NUMBER: 60/423,623
; PRIOR FILING DATE: 2002-11-05
; PRIOR APPLICATION NUMBER: 60/351,360
; PRIOR FILING DATE: 2002-01-28
; Remaining Prior Application data removed - See File Wrapper or PALM.
; NUMBER OF SEQ ID NOS: 2222
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 1275
; LENGTH: 719
; TYPE: PRT
; ORGANISM: Homo sapiens
US-10-775-204-1275

Query Match          100.0%; Score 169; DB 6; Length 719;
Best Local Similarity 100.0%; Pred. No. 5.3e-17;
Matches 32; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
```

OY 1 SPMVGGSGCFGRKMDRISSSGLGCKVLRH 32
DB 103 SPMVGGSGCFGRKMDRISSSGLGCKVLRH 134

RESULT 5
US-10-775-204-2203
Sequence 2203, Application US/10775204

GENERAL INFORMATION:
APPLICANT: Rosen, Craig A.
APPLICANT: Haseltine, William A.
APPLICANT: Balance, David J.
APPLICANT: Turner, Andrew J.
TITLE OF INVENTION: Albumin Fusion Proteins
FILE REFERENCE: PFS64
CURRENT APPLICATION NUMBER: US/10/775,204
CURRENT FILING DATE: 2004-02-11
PRIOR APPLICATION NUMBER: 60/341,811
PRIOR FILING DATE: 2001-12-21
PRIOR APPLICATION NUMBER: 60/360,000
PRIOR FILING DATE: 2002-02-28
PRIOR APPLICATION NUMBER: 60/378,950
PRIOR FILING DATE: 2002-05-10
PRIOR APPLICATION NUMBER: 60/398,008
PRIOR FILING DATE: 2002-07-24
PRIOR APPLICATION NUMBER: 60/411,355
PRIOR FILING DATE: 2002-09-18
PRIOR APPLICATION NUMBER: 60/414,984
PRIOR FILING DATE: 2002-10-02
PRIOR APPLICATION NUMBER: 60/417,611
PRIOR FILING DATE: 2002-10-11
PRIOR APPLICATION NUMBER: 60/420,246
PRIOR FILING DATE: 2002-10-23
PRIOR APPLICATION NUMBER: 60/423,623
PRIOR FILING DATE: 2002-11-05
PRIOR APPLICATION NUMBER: 60/351,360
PRIOR FILING DATE: 2002-01-28
Remaining Prior Application data removed - See File Wrapper or PALM.
NUMBER OF SEQ ID NOS: 2222
SOFTWARE: PatentIn Ver. 2.0
SEQ ID NO 2203
LENGTH: 32
TYPE: PRT
ORGANISM: Homo sapiens
US-10-775-204-2203

Query Match 51.5%; Score 87; DB 6; Length 32;
Best Local Similarity 50.0%; Pred. No. 1.8e-06;
Matches 15; Conservative 6; Mismatches 9; Indels 0; Gaps 0;

OY 1 SPMVGGSGCFGRKMDRISSSGLGCKVLR 30
DB 2 APRLRSSSCFGRMDRIGAGSGCNSFR 31

RESULT 6
US-10-796-307-725
Sequence 725, Application US/10796307

GENERAL INFORMATION:
APPLICANT: CARGILL, Michele et al.
TITLE OF INVENTION: GENETIC POLYMORPHISMS ASSOCIATED WITH
FILE REFERENCE: C0001509
CURRENT APPLICATION NUMBER: US/10/796,307
CURRENT FILING DATE: 2004-03-10
NUMBER OF SEQ ID NOS: 44201
SOFTWARE: FastSeq for Windows Version 4.0
SEQ ID NO 725
LENGTH: 153
TYPE: PRT
ORGANISM: Homo sapiens
US-10-796-307-725

Query Match 51.5%; Score 87; DB 6; Length 153;
Best Local Similarity 50.0%; Pred. No. 1e-05;
Matches 15; Conservative 6; Mismatches 9; Indels 0; Gaps 0;

OY 1 SPMVGGSGCFGRKMDRISSSGLGCKVLR 30
DB 121 APRLRSSSCFGRMDRIGAGSGCNSFR 150

RESULT 7
US-10-775-204-2207
Sequence 2207, Application US/10775204

GENERAL INFORMATION:
APPLICANT: Rosen, Craig A.
APPLICANT: Haseltine, William A.
APPLICANT: Balance, David J.
APPLICANT: Turner, Andrew J.
TITLE OF INVENTION: Albumin Fusion Proteins
FILE REFERENCE: PFS64
CURRENT APPLICATION NUMBER: US/10/775,204
CURRENT FILING DATE: 2004-02-11
PRIOR APPLICATION NUMBER: 60/341,811
PRIOR FILING DATE: 2001-12-21
PRIOR APPLICATION NUMBER: 60/360,000
PRIOR FILING DATE: 2002-02-28
PRIOR APPLICATION NUMBER: 60/378,950
PRIOR FILING DATE: 2002-05-10
PRIOR APPLICATION NUMBER: 60/398,008
PRIOR FILING DATE: 2002-07-24
PRIOR APPLICATION NUMBER: 60/411,355
PRIOR FILING DATE: 2002-09-18
PRIOR APPLICATION NUMBER: 60/414,984
PRIOR FILING DATE: 2002-10-02
PRIOR APPLICATION NUMBER: 60/417,611
PRIOR FILING DATE: 2002-10-11
PRIOR APPLICATION NUMBER: 60/420,246
PRIOR FILING DATE: 2002-10-23
PRIOR APPLICATION NUMBER: 60/423,623
PRIOR FILING DATE: 2002-11-05
PRIOR APPLICATION NUMBER: 60/351,360
PRIOR FILING DATE: 2002-01-28
Remaining Prior Application data removed - See File Wrapper or PALM.
NUMBER OF SEQ ID NOS: 2222
SOFTWARE: PatentIn Ver. 2.0
SEQ ID NO 2207
LENGTH: 28
TYPE: PRT
ORGANISM: Homo sapiens
US-10-775-204-2207

Query Match 46.2%; Score 78; DB 6; Length 28;
Best Local Similarity 60.9%; Pred. No. 3.3e-05;
Matches 14; Conservative 2; Mismatches 7; Indels 0; Gaps 0;

OY 8 SGCGRKMDRISSSGLGCKVLR 30
DB 5 SSCFGGRMDRIGAGSGCNSFR 27

RESULT 8
US-10-681-389-22
Sequence 22, Application US/10681389

GENERAL INFORMATION:
APPLICANT: Kenen, John H.
APPLICANT: Tiramontano, Alfonso
APPLICANT: Pilon, April L.
APPLICANT: Lohas, Gerald F.
APPLICANT: Roberts, Steven F.
TITLE OF INVENTION: HEAT-SHOCK FUSION-BASED VACCINE SYSTEM
FILE REFERENCE: U.S. Patent Application No. 09/026,276
CURRENT APPLICATION NUMBER: US/10/681,389
CURRENT FILING DATE: 2003-10-07
PRIOR APPLICATION NUMBER: US/09/964,201A


```

; PRIOR FILING DATE: 2002-05-21
; NUMBER OF SEQ ID NOS: 35
; SOFTWARE: Patent Ver. 2.0
; SEQ ID NO 22
; LENGTH: 31
; TYPE: PRT
; ORGANISM: Homo sapiens
US-10-681-389-22

Query Match          46.2%  Score 78;  DB 6;  Length 31;
Best Local Similarity 60.9%  Pred. No. 3.7e-05;
Matches 14;  Conservative 2;  Mismatches 7;  Indels 0;  Gaps 0;

QY      8  SGCGRMDRIRISSSGIGCKVLR 30
DB      8  SSCFGMRDRIGAGSGGCSFR 30

RESULT 9
PCT-US04-05092-28
; Sequence 28, Application PC/TUS0405092
; GENERAL INFORMATION:
; APPLICANT: INCYTE CORPORATION; RAMKUMAR, Jayalaxmi;
; APPLICANT: MARQUIS, Joseph P.; SWARNAKAR, Anita;
; APPLICANT: CHAWLA, Narinder K.; TRAN,uyen K.;
; APPLICANT: BECHA, Shanya; LEE, Soo Yeun;
; APPLICANT: HAPALIA, April J.A.; RICHARDSON, Thomas;
; APPLICANT: KHARE, Reena; JIANG, Xin;
; APPLICANT: JACKSON, Alan; YANG, Junming;
; APPLICANT: GORVAD, Ann
; TITLE OF INVENTION: KINASES AND PHOSPHATASES
; FILE REFERENCE: PF-1643 PCT
; CURRENT APPLICATION NUMBER: PCT/US04/05092
; CURRENT FILING DATE: 2004-02-20
; PRIOR APPLICATION NUMBER: US 60/449,059
; PRIOR FILING DATE: 2003-02-20
; PRIOR APPLICATION NUMBER: US 60/456,932
; PRIOR FILING DATE: 2003-03-19
; PRIOR APPLICATION NUMBER: US 60/456,844
; PRIOR FILING DATE: 2003-03-28
; PRIOR APPLICATION NUMBER: US 60/461,678
; PRIOR FILING DATE: 2003-04-09
; PRIOR APPLICATION NUMBER: US 60/463,937
; PRIOR FILING DATE: 2003-04-17
; NUMBER OF SEQ ID NOS: 92
; SOFTWARE: PERL Program
; SEQ ID NO 28
; LENGTH: 657
; TYPE: PRT
; ORGANISM: Homo sapiens
; FEATURE:
; NAME/KEY: misc feature
; OTHER INFORMATION: Incyte ID No: 7517520CD1
PCT-US04-05092-28

Query Match          29.9%  Score 50.5;  DB 1;  Length 657;
Best Local Similarity 44.8%  Pred. No. 12;
Matches 13;  Conservative 5;  Mismatches 6;  Indels 5;  Gaps 2;

QY      1  SPKNVQSGCGFRKXDRIRISSSGIGCKVLR 29
DB      566  SPEVISGEG-YGRADVWS---LGCTTV 589

RESULT 10
US-10-487-092-18
; Sequence 18, Application US/10487092
; GENERAL INFORMATION:
; APPLICANT: INCYTE CORPORATION; YUE, Henry
; APPLICANT: LU, Dyang Alma M.; SWARNAKAR, Anita;
; APPLICANT: TANG, Y. Tom; GRIFFIN, Jennifer A.;
; APPLICANT: EMERLING, Brooke M.; FORSYTHE, Ian J.;
; APPLICANT: YAO, Monique G.; RAMKUMAR, Jayalaxmi;
```

```

; APPLICANT: RICHARDSON, Thomas W.; BECHA, Shanya D.;
; APPLICANT: LEE, Ernestine A.; WARREN, Bridget A.;
; APPLICANT: LEHR-WASON, Patricia M.; BAUGHN, Mariah R.;
; APPLICANT: LI, Joana X.; DUGGAN, Brendan M.;
; APPLICANT: GRIFFIN, Kimberly J.; LAL, Preeti G.;
; APPLICANT: BOROWSKI, Mark D.; ISON, Craig H.;
; APPLICANT: THANGAVELU, Kavitha; XU, Yuming;
; APPLICANT: LEE, Sally; ELLIOTT, Vicki S.;
; APPLICANT: SPRAGUE, William W.; AZIMZAI, Yalda;
; APPLICANT: HAPALIA, April J.A.; DING, Li;
; APPLICANT: NGUYEN, Daniel B.; HONCHELL, Cynthia D.;
; APPLICANT: LHO, Men; MALIA, Narinder K.;
; APPLICANT: MARQUIS, Joseph; JACKSON, Jennifer L.;
; APPLICANT: TRAN, Yuen K.
; TITLE OF INVENTION: INTRACELLULAR SIGNALING MOLECULES
; FILE REFERENCE: PF-1145 USN
; CURRENT APPLICATION NUMBER: US/10/487,092
; CURRENT FILING DATE: 2004-02-17
; PRIOR APPLICATION NUMBER: PCT US02/26322
; PRIOR FILING DATE: 2002-06-16
; PRIOR APPLICATION NUMBER: US 60/313,245
; PRIOR FILING DATE: 2001-08-17
; PRIOR APPLICATION NUMBER: US 60/314,751
; PRIOR FILING DATE: 2001-08-24
; PRIOR APPLICATION NUMBER: US 60/316,752
; PRIOR FILING DATE: 2001-08-31
; PRIOR APPLICATION NUMBER: US 60/316,847
; PRIOR FILING DATE: 2001-08-31
; PRIOR APPLICATION NUMBER: US 60/322,188
; PRIOR FILING DATE: 2001-09-14
; PRIOR APPLICATION NUMBER: US 60/326,390
; PRIOR FILING DATE: 2001-09-28
; PRIOR APPLICATION NUMBER: US 60/328,952
; PRIOR FILING DATE: 2001-10-12
; PRIOR APPLICATION NUMBER: US 60/345,468
; PRIOR FILING DATE: 2001-10-18
; PRIOR APPLICATION NUMBER: US 60/372,499
; PRIOR FILING DATE: 2002-04-12
; NUMBER OF SEQ ID NOS: 90
; SOFTWARE: PERL Program
; SEQ ID NO 18
; LENGTH: 874
; TYPE: PRT
; ORGANISM: Homo sapiens
; FEATURE:
; NAME/KEY: misc feature
; OTHER INFORMATION: Incyte ID No: 7723840CD1
US-10-487-092-18

Query Match          29.0%  Score 49;  DB 6;  Length 874;
Best Local Similarity 34.4%  Pred. No. 27;
Matches 11;  Conservative 4;  Mismatches 17;  Indels 0;  Gaps 0;

QY      1  SPKNVQSGCGFRKXDRIRISSSGIGCKVLR 32
DB      318  SPENFKLSCTIRKTDSDXKFCFDEIVERH 349

RESULT 11
US-10-796-307-608
; Sequence 608, Application US/10796307
; GENERAL INFORMATION:
; APPLICANT: CARGILL, Michele et al.
; TITLE OF INVENTION: GENETIC POLYMORPHISMS ASSOCIATED WITH
; TITLE OF INVENTION: MYOCARDIAL INFARCTION, METHODS OF DETECTION AND USES THEREOF
; FILE REFERENCE: CL001509
; CURRENT APPLICATION NUMBER: US/10/796,307
; CURRENT FILING DATE: 2004-03-10
; NUMBER OF SEQ ID NOS: 44201
; SOFTWARE: FastSeq for Windows Version 4.0
; SEQ ID NO 608
; LENGTH: 1307
; TYPE: PRT
```

ORGANISM: Homo sapiens
US-10-796-307-608

Query Match 28.1% Score 47.5; DB 6; Length 1307;
Best Local Similarity 38.7% Pred. No. 69;
Matches 12; Conservative 4; Mismatches 6; Indels 9; Gaps 1;

QY 10 CCGRMRRISSS-----GLCCVLR 31
DB 5 CCGRLRRSSSTPRASCWSRGCCCHNRR 35

RESULT 12
US-10-767-701-46988
Sequence 46988, Application US/10767701
GENERAL INFORMATION:
APPLICANT: Kovalic, David K.
APPLICANT: Zhou, Yihua
APPLICANT: Cao, Yongwei

TITLE OF INVENTION: Nucleic Acid Molecules and Other Molecules Associated With
FILE REFERENCE: 38-21(5353)B
CURRENT APPLICATION NUMBER: US/10/767,701
CURRENT FILING DATE: 2004-01-29
NUMBER OF SEQ ID NOS: 63128
SEQ ID NO 46988
LENGTH: 147
TYPE: PRT
ORGANISM: Sorghum bicolor
FEATURE:
OTHER INFORMATION: Clone ID: SORBI-28MAY03-C49_322.pcp
US-10-767-701-46988

Query Match 27.5% Score 46.5; DB 6; Length 147;
Best Local Similarity 40.6% Pred. No. 8.7;
Matches 13; Conservative 4; Mismatches 12; Indels 3; Gaps 1;

QY 3 KXVGGGCGFRM--DRISSSGLCCVLR 31
DB 16 KGLSSGISGRKLAVASRPSBARACRSTR 47

RESULT 13
US-10-767-701-33741
Sequence 33741, Application US/10767701
GENERAL INFORMATION:
APPLICANT: Kovalic, David K.
APPLICANT: Zhou, Yihua
APPLICANT: Cao, Yongwei

TITLE OF INVENTION: Nucleic Acid Molecules and Other Molecules Associated With
FILE REFERENCE: 38-21(5353)B
CURRENT APPLICATION NUMBER: US/10/767,701
CURRENT FILING DATE: 2004-01-29
NUMBER OF SEQ ID NOS: 63128
SEQ ID NO 33741
LENGTH: 116
TYPE: PRT
ORGANISM: Sorghum bicolor
FEATURE:
OTHER INFORMATION: Clone ID: SORBI-28MAY03-C36286_1.pcp
US-10-767-701-33741

Query Match 26.6% Score 45; DB 6; Length 116;
Best Local Similarity 42.1% Pred. No. 11;
Matches 8; Conservative 5; Mismatches 6; Indels 0; Gaps 0;

QY 13 RXMDRISSSGLCCVLR 31
DB 4 KXMRISITOPSGCTLRK 22

RESULT 14

US-10-767-701-32774
Sequence 32774, Application US/10767701
GENERAL INFORMATION:
APPLICANT: Kovalic, David K.
APPLICANT: Zhou, Yihua
APPLICANT: Cao, Yongwei

TITLE OF INVENTION: Nucleic Acid Molecules and Other Molecules Associated With
FILE REFERENCE: 38-21(5353)B
CURRENT APPLICATION NUMBER: US/10/767,701
CURRENT FILING DATE: 2004-01-29
NUMBER OF SEQ ID NOS: 63128
SEQ ID NO 32774
LENGTH: 182
TYPE: PRT
ORGANISM: Sorghum bicolor
FEATURE:
OTHER INFORMATION: Clone ID: SORBI-28MAY03-C17396_1.pcp
US-10-767-701-32774

Query Match 26.6% Score 45; DB 6; Length 182;
Best Local Similarity 28.6% Pred. No. 18;
Matches 6; Conservative 9; Mismatches 6; Indels 0; Gaps 0;

QY 6 QGSGCFGRMDRISSSGLGC 26
DB 32 QGPGYAIQONQLAAMGWC 52

RESULT 15
US-09-979-167-123
Sequence 123, Application US/09979167
GENERAL INFORMATION:
APPLICANT: PLOMAN, GREGORY D.
APPLICANT: MARTINEZ, RICARDO
APPLICANT: WHYTE, DAVID
APPLICANT: SUDERSANAM, SUCHA

TITLE OF INVENTION: PROTEIN KINASES
FILE REFERENCE: 038602/1273
CURRENT APPLICATION NUMBER: US/09/979,167
CURRENT FILING DATE: 2001-11-20
NUMBER OF SEQ ID NOS: 269
SOFTWARE: PatentIn Ver. 2.1
SEQ ID NO 123
LENGTH: 378
TYPE: PRT
ORGANISM: Murine sp.
US-09-979-167-123

Query Match 26.3% Score 44.5; DB 5; Length 378;
Best Local Similarity 34.3% Pred. No. 48;
Matches 12; Conservative 6; Mismatches 10; Indels 7; Gaps 2;

QY 1 SPXVGGGCGFRMDRISSSGLGC--KVLRR 32
DB 48 APEVLQKTCYDSSADWFS---LGCMLFKLRLGH 78

Search completed: March 29, 2004, 14:47:48
Job time: 14 secs



STIC Search Report

Biotech-Chem Library

STIC Database Tracking Number: 118013

TO: Janet Epps-Ford
Location: rem/2c05/2c18
Art Unit: 1635
Monday, March 29, 2004

Case Serial Number: 09/902517

From: Edward Hart
Location: Biotech-Chem Library
REM-1A55
Phone: 571-272-2512

edward.hart@uspto.gov

Search Notes

Examiner Epps-Ford,

Here are the results of the search you requested.

Please feel free to contact me if you have any questions.

Edward Hart

STIC-Biotech/ChemLib

118013

From: Epps-Ford, Janet
Sent: Friday, March 26, 2004 4:52 PM
To: STIC-Biotech/ChemLib
Subject: Protein sequence Search

RECEIVED
MAR 29 2004
STIC

Please search SEQ ID NO: 49 of application 09/902,517 in all pending and commercial amino acid databases.

Thanks,

Janet L. Epps-Ford, Ph.D.

Art Unit 1635

Mailbox: Remsen 2C18

Office: Remsen 2C05

Phone: 571-272-0757

Fax: 571-273-0757

3/29/04

1- AA

ABSS@SP

3/29/04